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ORIGINAL ARTICLES

ACTION OF PENICILLIN.....677
Chester N. Frazier, M.D., and Edward H. Frieden, Ph.D., Galveston, Texas.

PENICILLIN IN THE SYPHILITIC PREGNANT WOMAN.....683
Norman R. Ingraham Jr. M.D.; John H. Stokes, M.D.; Herman Beerman, M.D.; John W. Lentz, M.D., and Virgene S. Wammock, M.D., Philadelphia.

PRENATAL SYPHILIS.....688
Mary Stewart Goodwin, M.D., and Joseph Earle Moore, M.D., Baltimore.

SYPHILITIC INFANT.....694
Norman R. Ingraham Jr., M.D.; John H. Stokes, M.D.; Herman Beerman, M.D.; John W. Lentz, M.D.; Paul György, M.D., and Elizabeth K. Rose, M.D., Philadelphia.

TREATMENT OF EARLY SYPHILIS...696
Arthur G. Schoch, M.D., and Lee J. Alexander, M.D., Dallas, Texas.

PENICILLIN IN NEUROSYPHILIS...698
Paul A. O'Leary, M.D.; Louis A. Brunsting, M.D., and Orville Ockuly, M.D., Rochester, Minn.

THROMBOCYTOPENIC PURPURA....700
William B. Patterson, M.D., Puunene, Maui, Hawaii.

CLINICAL NOTES

PRIVINE DEPENDENCE.....702
Lawrence E. Putnam, M.D., and Robert P. Herwick, M.D., Washington, D. C.

TREATMENT OF UREMIA.....703
Howard A. Frank, M.D.; Arnold M. Seligman, M.D., and Jacob Fine, M.D., Boston.

COUNCIL REPORTS

Council on Foods and Nutrition.....705

EDITORIALS AND COMMENTS

Status Lymphaticus.....706
Therapy of Filariasis Bancrofti.....706
Liver and Shock.....707
Military Deaths in World War II.....708
Insect Control.....708
Hodgkin's Disease.....708
Adrenal Hypertension.....708
A. M. A. Health Program.....709

MEDICINE AND THE WAR

Veterans Administration.....710
Hospitals Needing Interns.....710
Physicians Separated from Service.....711

ORGANIZATION SECTION

Secretaries and Editors Conference....713
Coming Medical Meetings.....719
Washington Letter.....720
Medical Legislation.....721
Council on Medical Service.....723
The Status of the English Doctor.....724

REGULAR DEPARTMENTS

Medical News.....725
Deaths.....729
Foreign Letters:
London.....731
Italy.....731
Brazil.....732
Marriages.....732
Correspondence.....733
Bureau of Investigation.....734
Medicolegal Abstracts.....734
Medical Examinations and Licensure..735
Current Medical Literature.....736
Book Notices.....751
Queries and Minor Notes.....753
Tonics and Sedatives.....Adv. Page 48
Books Received.....Adv. Page 70

A.M.A. SESSION ★ SAN FRANCISCO ★ JULY 1-5, 1946

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ACTION OF PENICILLIN, ESPECIALLY ON TREPONEMA PALLIDUM

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and
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The precise way in which penicillin acts to destroy microbial life is unknown. Penicillin differs, however, from the common antiseptics, such as the phenols, in that it is not a general protoplasmic poison. In this respect it resembles other antibiotic substances as well as the sulfonamides, which act primarily by inhibiting the growth of the cell. For this reason it is generally assumed that penicillin interferes with the normal completion of some metabolic transformation, thus inhibiting the development of the cell and leading eventually to its death.

Certain antibacterial substances are inhibited by specific chemical agents. The identification of the inhibitor has contributed in some instances to a clearer understanding of the essential mode of action of the antibacterial substance, as for example the inhibition of the sulfonamides by para-aminobenzoic acid. In this instance the phenomenon has been explained by the fact that para-aminobenzoic acid is a factor in bacterial nutrition closely related in chemical structure to the sulfonamides in that the sulfonamido group of the latter is replaced by a carboxyl group in the para-aminobenzoic acid molecule. It is thought, therefore, that at some vital stage of bacterial metabolism there is competition between the sulfonamide and para-aminobenzoic acid for an enzyme, with the result that the sulfonamide, not possessing the specific action of the metabolite, interrupts the normal metabolic process with which the substrate is concerned. This is an engaging hypothesis, although there may yet be no direct proof to support it.[1]

A similar example of competitive inhibition is had in the action of pantoyltaurine on the growth of hemolytic streptococci and Corynebacterium diphtheriae.[2] Inhibition of growth in this instance is the result apparently of an interference by pantoyltaurine with the utilization of pantothenic acid by the bacterial organisms.

ANTIBACTERIAL ACTION OF PENICILLIN

Potency.—Penicillin is the most potent, and yet nontoxic, antibacterial substance yet applied to the treatment of clinical disease. The purest penicillin thus far available inhibits the growth of the most sensitive organisms, such as the staphylococcus and gonococcus, in dilutions of about 1 : 50,000,000. Preparations now in clinical use will inhibit at dilutions of from 1 : 5,000,000 to 1 : 15,000,000 under optimal conditions.[3] As little as 0.04 unit per cubic centimeter of penicillin (corresponding to about 0.02 microgram of the pure substance) is sufficient to kill 200 million organisms. This activity is of the same order as that of the highly active enzymes and suggests that penicillin is a part of an enzyme or actuates an enzymatic system.[4]

The preparations of penicillin in general use are mixtures of the sodium salt and different amounts of other substances of an unknown nature. Apparently, it is some fraction of partially purified penicillin which is effective in the treatment of syphilis. This possibility is suggested by the observations of Dunham and Rake,[5] who found that crystalline penicillin G did not immobilize Treponema pallidum in the same concentrations as did the partially purified penicillin. A substance in the latter which can be concentrated by adsorption on alumina possessed the greatest antispirochetal action.

Although crystalline penicillin G did not immobilize spirochetes in vitro, it did possess in large doses some degree of antisyphilitic action, as shown by its ability to modify the reaction of the rabbit to infection with Treponema pallidum.

The effect of purification on the antispirochetal potency of penicillin is evident in the results of immobilization tests and in the protection afforded laboratory animals against syphilitic infection. The alumina adsorbate immobilized all spirochetes in concentrations equivalent to 2,200 units per cubic centimeter, but 8,800 units per cubic centimeter of a recently prepared commercial penicillin failed to immobilize all organisms. Crystalline penicillin G in a dilution of 8,800 units per cubic centimeter had no effect on motility. Partially purified penicillin (330 units per milligram) protected 4 out of 5 rabbits from infection as determined by lymph node transfers when 66,000 units per kilogram of body weight was injected intramuscularly five hours after a suspension of Treponema pallidum was rubbed into an incision of the skin. The same dose of crystalline penicillin G failed to protect animals under similar conditions.

Further evidence that the antispirochetal potency of penicillin resides in one or more of the impurities in the preparations was had in the failure of weak solutions of penicillinase to reduce the immobilizing activity of the substance under conditions which would inactivate a large part of the penicillin present.

From the Department of Dermatology and Syphilology, University of Texas School of Medicine.

Paper in a symposium on "The Penicillin Therapy of Syphilis" published under the auspices of the Section on Dermatology and Syphilology.

1. Dubos, R. J.: The Mode of Action of Chemotherapeutic Agents, Bull. New York Acad. Med. **21**: 27 (Jan.) 1945. Woods.

2. McIlwain, H.: Bacterial Inhibition by Metabolite Analogues; Pantoyltaurine: Antibacterial Index of Inhibitors, Brit. J. Exper. Path. **23**: 95 (April) 1942.

3. Florey, H. W., and Jennings, M. A.: The Principles of Penicillin Treatment, Brit. J. Surg. Supp. **32**: 112 (July) 1944.

4. Chain, E., and Duthie, E. S.: Bactericidal and Bacteriolytic Action of Penicillin on the Staphylococcus, Lancet **1**: 652 (May 26) 1945.

5. Dunham, W. B., and Rake, G.: The Relative Activity of Partially Purified Penicillin and of Crystalline Penicillin G on Treponema Pallidum, Am. J. Syph., Gonor. & Ven. Dis. **29**: 214 (March) 1945.

Selective Action of Penicillin.—In general, the gram-positive organisms are sensitive to penicillin, as also are the gram-negative cocci, but the gram-negative bacilli are insensitive. Some species, however, show strain variations. Penicillin has in vitro a high degree of specificity for the pyogenic cocci, pneumococci, anaerobic clostridia and the pathogenic gram-negative cocci Neisseria gonorrheae and Neisseria meningitidis. There is, however, a lack of sensitivity on the part of the colon-typhoid group and the hemophilic and chromogenic bacilli. The tubercle bacillus and Trypanosoma equiperdum are resistant,[6] but both Treponema pallidum and Borrelia novyi are inhibited by its action, as apparently are also Leptospira icterohemorrhagiae and Spirillum minus.[7] Recent clinical observations indicate that the spirochete of yaws is also sensitive to penicillin,[8] and favorable results have followed its use in fusospirochetosis.[9]

Treponema Pallidum.—In December 1943 Mahoney, Arnold and Harris[10] reported the beneficial effect of penicillin on 4 patients with seropositive primary syphilis. A short time thereafter Dunham, Hamre, McKee and Rake[11] found that relatively high concentrations of penicillin, from 800 to 1,600 units per 0.8 cc., affected in vitro the motility of Treponema pallidum. The organisms were obtained from the testes of experimentally infected rabbits in the stage of acute orchitis. It was shown also by Eagle and Musselman[12] that penicillin exerted a spirocheticidal effect on artificially cultivated strains of spirochetes.

The immediate effects of penicillin on early syphilitic infections in man have been satisfactorily demonstrated by the disappearance of surface organisms from open lesions, the healing of lesions and a trend toward the reversal of serologic reactions.[13]

Attempts have been made to establish the minimal healing and sterilizing doses of penicillin in experimental syphilis of the rabbit, but the results thus far have lacked definitive significance.[14] In general, single large doses have not proved effective as far as permanent suppression of the infection is concerned. It is becoming increasingly clear that the proper spacing of adequate doses of penicillin over a period of time, yet undetermined from the human subject, will be required for the permanent control of the infection, if that can be achieved.

Single intravenous doses of from 33,000 to 47,000 units per kilogram were required to produce disappearance of spirochetes from scrotal chancres in the rabbit. The same effect was obtained with about 16,000 units per kilogram when the drug was administered in repeated doses of approximately 4,000 units per kilogram over a period of seventy-two hours. The latter dose was sufficient to produce healing of the testicular lesions in from ten to fifteen days. Lymph nodes of 4 rabbits treated with 132,000 to 282,000 units per kilogram were proved subsequently to be infectious. Selbie and Simon[15] found that 45,000 units per kilogram, when given to rabbits in three equally divided doses at intervals of three hours, caused the disappearance of organisms within twenty-four hours as determined by the direct examination of testicular lesions. Organisms, however, reappeared in the majority of the lesions in from thirty to forty-five days after treatment. In these experiments it is apparent that the factor of time as related to dosage was at fault.

MECHANISM OF ACTION

There is a body of facts relating to the biologic conditions which limit, or proceed from, the effects of penicillin that help to define the mechanism of its action. These have been adduced chiefly from in vitro experiments with the more sensitive micro-organisms such as the pyogenic cocci, the pneumococcus and the gonococcus. Only a few similar observations have been made on the behavior of Treponema pallidum. The lack of suitable biologic materials and technics for the study in vitro of this most fastidious organism has imposed limitations on laboratory investigation.

Antibacterial Action.—It is becoming more apparent that penicillin acts chiefly as a bactericidal agent. According to a recent statement of Chain and Duthie[4] there is no conclusive evidence that it can exert a purely bacteriostatic effect under any condition.

The bactericidal action of penicillin, originally suspected by Fleming,[16] was doubted at first by Abraham and Chain,[17] who were unable to detect any disturbance in oxygen uptake of resting staphylococci even in high concentrations of the antibiotic substance. Hobby and her associates,[18] however, observed a powerful killing effect of penicillin on pneumococci, hemolytic streptococci and staphylococci under conditions permitting rapid baterial growth. The number of surviving organisms decreased geometrically as the time of action increased by arithmetical units until at least 99 per cent of the organisms were killed. Bactericidal action was enhanced by substances favorable to bacterial growth and diminished by those interfering with growth.[19] A similar mode of action on the meningococcus was observed by

6. Robinson, H. J.: Toxicity and Efficacy of Penicillin, J. Pharmacol. & Exper. Therap. **77:** 70 (Jan.) 1943.

7. Heilman, F. R., and Herrel, W. E.: Penicillin in the Treatment of Experimental Relapsing Fever, Proc. Staff Meet., Mayo Clin. **18:** 457 (Dec. 1) 1943. Augustine, D. L.; Weinman, D., and McAllister, J.: Rapid and Sterilizing Effect of Penicillin Sodium in Experimental Relapsing Fever Infections and Its Ineffectiveness in the Treatment of Trypanosomiasis (Trypanosoma Lewisi) and Toxoplasmosis, Science **99:** 19 (Jan. 7) 1944. Heilman, F. R., and Herrel, W. E.: Penicillin in the Treatment of Experimental Leptospirosis Icterohemorrhagica (Weil's Disease), Proc. Staff Meet., Mayo Clin. **19:** 88 (Feb. 23) 1944. Lourie, E. M., and Collier, H. O. J.: The Therapeutic Action of Penicillin on Spirocheta Recurrentis and Spirillum Minus in Mice, Ann. Trop. Med. **37:** 200 (Dec. 31) 1943. Heilman, F. R., and Herrell, W. E.: Penicillin in the Treatment of Experimental Infections with Spirillum Minus and Streptobacillus Moniliformis (Rat Bite Fever), Proc. Staff Meet., Mayo Clin. **19:** 257 (May 17) 1944.

8. Whitehill, R., and Austrian, R.: The Treatment of Primary and Secondary Yaws with Penicillin. A Preliminary Report, Bull. Johns Hopkins Hosp. **75:** 232 (Oct.) 1944.

9. Pearce, W. F., and McDonald, J. B.: Treatment of Ambulatory Patients with Penicillin Sodium: Preliminary Studies of Fusospirochetosis, J. A. M. A. **128:** 342 (June 2) 1945.

10. Mahoney, J. F.; Arnold, R. C., and Harris, A.: Penicillin Treatment of Early Syphilis: Preliminary Report, Am. J. Pub. Health **33:** 1387 (Dec.) 1943.

11. Dunham, W. B., Hamre, Dorothy M.; McKee, Clara M., and Rake, G.: Action of Penicillin and Other Antibodies on Treponema Pallidum, Proc. Soc. Exper. Biol. & Med. **55:** 158 (March) 1944.

12. Eagle, Harry, and Musselman, Arlyne D.: The Spirocheticidal Action of Penicillin in Vitro and Its Temperature Coefficient, J. Exper. Med. **80:** 493 (Dec.) 1944.

13. Moore, J. E.; Mahoney, J. F.; Schwartz, W. H.; Sternberg, T. H., and Wood, W. B.: The Treatment of Early Syphilis with Penicillin: Preliminary Report of 1,418 Cases, J. A. M. A. **126:** 67 (Sept. 9) 1944.

14. Ercoli, N., and Laffertry, L. C.: The Antispirochetal Activity of Penicillin in Experimental Infections, Proc. Soc. Exper. Biol. & Med. **57:** 4 (Oct.) 1944.

15. Selbie, F. R., and Simon, R. D.: The Effect of Penicillin on Treponema Pallidum Infection in Rabbits, Brit. J. Exper. Path. **25:** 229 (Dec.) 1944.

16. Fleming, A.: On the Antibacterial Action of Cultures of Penicillium, with Special Reference to Their Use in the Isolation of B. Influenzae, Brit. J. Exper. Path. **10:** 226 (June) 1929.

17. Abraham, E. P.; Chain, E.; Fletcher, C. M.; Gardner, A. D.; Heatley, N. G.; Jennings, M. A., and Florey, H. W.: Further Observations on Penicillin, Lancet **2:** 177 (Aug. 16) 1941.

18. Hobby, Gladys L.; Meyer, Karl, and Chaffee, Eleanor: Observations on the Mechanism of Action of Penicillin, Proc. Soc. Exper. Biol. & Med. **50:** 281 (June) 1942.

19. Hobby, Gladys L., and Dawson, M. H.: Bacteriostatic Action of Penicillin on Hemolytic Streptococci in Vitro, Proc. Soc. Exper. Biol. & Med. **56:** 178 (June) 1944; Effect of Rate of Growth of Bacteria on Action of Penicillin, ibid. **56:** 181 (June) 1944.

Miller and Foster;[20] and Rammelkamp and Keefer[21] found evidence of bactericidal action on the streptococcus and staphylococcus in human blood.

The rate of killing is characteristic of the organism and varies inversely with the original number of organisms in the culture and directly with the concentration of penicillin up to certain limits, beyond which increases in concentration apparently no longer enhance its effectiveness. No appreciable amount of penicillin is absorbed or destroyed as a result of antibacterial action. Perhaps most significant of all is the finding that the greatest destruction of organisms occurs during the phase of rapid multiplication.

Recently Chain and Duthie[4] reported that during the resting phase of the cultural cycle of the staphylococcus large concentrations of penicillin had no effect on the rate of oxygen uptake. However, during the early lag phase and the logarithmic phase of growth, penicillin in very small concentrations (0.04-0.1 unit per cubic centimeter) exerted a strong inhibitory effect on oxygen uptake and eventually stopped the process altogether. This would confirm the earlier observations and indicates that penicillin kills bacteria in the phase of multiplication but does not kill them in the resting stage. It would appear, therefore, that penicillin interferes with a metabolic function involved in the early stages of bacterial development.

In this respect there is evidence that the sulfonamides act in a manner similar to penicillin, with the exception that penicillin is capable of destroying bacteria in the early lag phase of growth before actual cell division begins, whereas the sulfonamides exert a similar action only after a number of cell divisions have occurred in its presence.[22] As pointed out by Chain and Duthie, it is probable that conditions occur in the body under which micro-organisms may be in the resting stage and thus be insusceptible to the action of penicillin.

The fact that penicillin as well as some of the other antibiotics (gliotoxin, aspergillic acid, bromoaspergillic acid and fumigacin)[11] are the only chemotherapeutic agents besides the arsenical, bismuth and mercurial compounds which are effective against Treponema pallidum suggests that a careful consideration of the mechanism of action of the latter may be helpful in interpreting the available data relating to the mechanism of the action of penicillin.

THE MECHANISM OF SPIROCHETICIDAL ACTION OF THE ARSENICAL COMPOUNDS

It was once generally accepted that the arsphenamines had no direct spirocheticidal action and that their effectiveness depended on the conversion of the arsenical compound in the body into some other substance or on the stimulation of some obscure mechanism of defense in the body. Doubting these assumptions, Eagle[23] in a series of experiments found no evidence to support the view that the arsphenamines are themselves inactive or are converted by the tissues to a spirocheticidal agent. In fact, he observed that tissues such as testicular extractives inhibited rather than accentuated the antispirochetal action of the arsenical. He was able to show further that the trivalent arsenicals and a phenylarsenoxide[23] had a definite spirocheticidal effect in vitro in dilutions as high as those attained in vivo after therapeutic administration of these drugs.

Several years ago, in a study of the trypanocidal action of arsenical drugs, Voegtlin, Dyer and Leonard[24] suggested that arsenic may combine with the sulfhydryl groups in the organism in the process of its destruction. They observed that cysteine significantly retarded or abolished in vivo the trypanocidal action of the arsenical, presumably because the excess cysteine competed for the arsenical with a sulfhydryl component of the trypanosome.

Later, in testing this hypothesis, Eagle[25] found that various sulfhydryl compounds (cysteine, glutathione and thioglycolic acid) almost completely abolished the antispirochetal action of arsenical, mercurial and bismuth compounds in vitro in what was probably a freely reversible reaction. The fact that all the antispirochetal agents tested were rapidly and almost completely inactivated by the addition of sulfhydryl compounds suggested to him that they may owe their therapeutic activity to similar combinations with sulfhydryl groups in the spirochetes.

In this connection it should be emphasized, as pointed out by Eagle, that the action of sulfhydryl compounds in inhibiting the spirocheticidal and trypanocidal action of the arsenoxides is insufficient to prove that the therapeutic action of these compounds is effected by combination with labile sulfhydryl groups within the sensitive organism. It is possible that the action of the inhibitor is merely to block the arsenic-containing molecule so that the latter is unable to affect a reaction completely unrelated to —SH metabolism. However, the fact that such inhibitors are equally effective against the arsphenamines is powerful support for this attractive hypothesis. There is no a priori reason to suppose that the reaction between sulfhydryl compounds and arsphenamine or related compounds proceeds to any considerable extent, at least in vitro. There is ample evidence that the arsphenamines do not require conversion into arsenoxides in order to exert their spirocheticidal and trypanocidal effects.[26] The inhibitory effect of various sulfhydryl compounds in this case, therefore, suggests an intimate relationship between such compounds and the physiologic process, or processes, affected by the drug.

MECHANISM OF ANTISPIROCHETAL ACTION OF PENICILLIN

Action in Vitro.—Pathogenic strains of Treponema pallidum have not been cultivated on artificial mediums. However, strains which purport to be Treponema pallidum have been cultivated. These are not pathogenic for animals and differ morphologically from the true organism. The so-called Reiter's strain grows luxuriantly in Brewer's thioglycolate medium, enriched with one-tenth volume of heated rabbit's serum.

Using the Reiter strain of spirochete, Eagle and Musselman[12] found that penicillin in threshold concen-

20. Miller, C. P., and Foster, A. Z.: Studies on the Action of Penicillin: Bactericidal Action of Penicillin on Meningococcus in Vitro, Proc. Soc. Exper. Biol. & Med. **56**: 205 (June) 1944.

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trations of 0.01 unit per cubic centimeter was actively spirocheticidal in vitro and that the rate and degree of action increased with the concentration of penicillin up to a level of approximately 0.1 to 0.25 unit per cubic centimeter. At this level fully 99 per cent of the organisms were made nonviable within twelve hours, as indicated by their failure to grow in subcultures. This effect was not improved by higher concentrations of the antibiotic agent.

Organisms remained actively motile for a period of from eight to twenty-four hours after they had become nonviable from contact with the penicillin. As doses of penicillin approximately 10,000 times those required to inhibit the growth of the spirochetes in subcultures did not accelerate the immobilization of the organisms, it was the impression that the metabolic system affected was not immediately essential to the life of the spirochete.

It was also demonstrated that the rate at which organisms were killed increased with temperature in the range of 8 to 40 C., the increase being independent of the concentration of penicillin employed (0.25 to 250 units per cubic centimeter).

Action in Vivo.—Suspensions of pathogenic Treponema pallidum obtained from testicular lesions of the rabbit were not immobilized in from two to six hours by concentrations of penicillin up to 500 units per cubic centimeter. Since the motility of the highly susceptible cultured spirochetes was not affected in that period of time and in those concentrations, it was thought that the observation did not exclude a direct spirocheticidal effect. In the case of the cultured organisms, penicillin was actively spirocheticidal in minute doses yet did not affect the motility of the organism. In other words, it seems probable that penicillin may directly inhibit the function of multiplication of the spirochete without initially destroying its power of motion.

When partially purified penicillin in concentrations insufficient to cause complete immobilization of pathogenic strains of Treponema pallidum were used, Dunham and Rake [5] saw that the last form of motion to be lost was the bending of the body of the spirochete near the midpoint. This suggested to them that axial rotation of the organism is caused by the motion of its flagella. In such case the flagella would appear to be more sensitive to penicillin than is the body of the organism.

These investigators also found that penicillin probably destroys the reproductive capacity of the spirochete without inhibiting its function of locomotion. Spirochetes exposed to 1,100 units per cubic centimeter of partially purified penicillin did not produce demonstrable signs of disease in rabbits over a period of two months, although many spirochetes were still motile at the time of inoculation. Mixtures containing 550 units per cubic centimeter and those containing 1,100 units per cubic centimeter showed little difference in the percentage of motile organisms, but the difference in the infectivity of the two mixtures was extreme.

It will be recalled that Eagle and Musselman observed a similar differentiation of action on cultivated strains of spirochetes. The results of the in vivo experiments of Dunham and Rake were inconclusive, however, since the possibility of latent infection in the rabbits was not excluded.

As the rate at which spirochetes were killed by penicillin was independent within wide limits of its concentration, it was suggested that, if an effective level of penicillin could be maintained in the tissues, further increase in the size of individual doses would add little to the efficacy of treatment.

This suggestion accords with the facts as they are known concerning other micro-organisms sensitive to the action of penicillin. Increasing the minimal concentration of penicillin which will completely inhibit an inoculum of certain strains of bacteria in a stated period of time does not alter the rate or the extent of bacterial inhibition per unit of time.

As pointed out by McDermott, Benoit and Dubois,[27] once the minimal effective concentration of penicillin is attained, remission of syphilitic disease will occur, and much larger concentrations of the antibiotic agent per unit of time serve no useful purpose; only by the maintenance of the minimal effective level for a period much longer than that which establishes the primary remission can a relapse of the disease be prevented. There is also reason to believe that the maintenance of effective levels of penicillin in the tissues for a prolonged period of time need not be continuous. The absolute values of the minimal effective level of penicillin and the time over which it must be maintained obviously must vary with the micro-organism and probably with the nature of the tissue reaction which it produces. The factor of tissue reaction would seem to be of importance in a disease such as syphilis, in which the reaction in the early acute phase differs measurably from that of the late chronic phase, especially as it involves the central nervous and cardiovascular systems.

The minimal concentration of penicillin which will completely inhibit Treponema pallidum in vitro is not known. Certain streptococci and other organisms are inhibited by concentrations ranging from 0.01 to 0.02 unit per cubic centimeter. The Reiter's strain of spirochete can be inhibited completely in vitro for a period of seven days by concentrations of from 0.02 to 0.05 unit per cubic centimeter.[12] Concentrations of penicillin of 0.01 to 0.04 unit per cubic centimeter in the blood serum are associated with rapid disappearance of spirochetes from the surface lesions and healing of the lesions. On the basis of such information it has been assumed by McDermott that a concentration of penicillin in the serum of 0.078 unit per cubic centimeter is probably well above the minimal effective level for the destruction of the spirochete. (This is the lowest concentration of penicillin which can be measured in serum by the Rammelkamp method.) It would appear that blood levels of this height are maintained for a period of ninety minutes following a single intramuscular injection of 20,000 units of penicillin and for one hundred and twenty minutes following an injection of 40,000 units.[27]

It should be remembered, however, that concentrations of penicillin in the tissues may not be at the same level as in the serum, particularly in relatively avascular regions, so that a much higher serum level might be necessary to maintain an effective spirocheticidal concentration in such tissues.

The length of time during which effective levels must be maintained, and whether such levels need be continuous or might better be intermittent, are problems which have not yet been solved either in the laboratory or in the clinic.

27. McDermott, W.; Benoit, M., and DuBois, R.: Time-Dose Relationships of Penicillin Therapy: Regimens Used in Early Syphilis, Am. J. Syph., Gonor. & Ven. Dis. **29**: 345 (May) 1945.

EFFECT OF PENICILLIN ON MORPHOLOGY OF MICRO-ORGANISMS

It has long been known that the form of a bacterial cell is affected by the presence of other micro-organisms or by substances they produce. Borodulina [28] observed that antibiotic substances produced by actinomycetes influenced the growth of Bacillus mycoides in such a way as to delay cell division. As a result, the organisms became elongated and grew to an enormous size, often exhibiting a bizarre pleomorphism.

Gardner [29] saw that cultures of Clostridium welchi, when growing in the presence of penicillin at concentrations less than those required for complete inhibition of growth, developed an extreme elongation of the majority of cells. These took the form of segmented filaments often ten or more times as long as the normal cell. By further investigation this phenomenon was found to be characteristic of all bacillary forms which displayed any inhibition of growth in the presence of penicillin. On exposure to incompletely inhibitory concentrations, pleomorphism is also developed by other organisms, among them staphylococci, streptococci and the cholera vibrio. It was thought that the changes in form are due chiefly to the continuation of growth without the usual division and separation of cells.

Similar morphologic changes in the gonococcus in smears from patients under treatment with penicillin were described by Miller and his co-workers.[30] Alterations in form were seen at the time the number of organisms was diminishing most rapidly. Under similar circumstances, Cohn and Kornblith [31] found that "swollen, puffed-up, dumbbell-shaped or irregularly outlined ball-like forms" of gonococci appeared from one to five hours after the beginning of treatment.

Treponema pallidum.—Changes in the length of spirochetes obtained from patients under treatment with penicillin were first observed in this laboratory by H. G. Sleeper. During the examination by dark field illumination of material collected from the surface of chancres or from eroded papules of secondary syphilis it was found that the relative distribution of long and short forms of the spirochete varied after the beginning of treatment in such a way as to suggest that the changes observed were related to the effect of penicillin.

Within ninety minutes after the first injection of 20,000 units of penicillin there was a relative increase in the number of long forms of the spirochete. The increase was progressive within limits until organisms could no longer be found in the dark field preparations. In 1 instance, at two and a half hours after the first injection of 20,000 units of penicillin the ratio of long to short forms increased from 1 to 22 to 1 to 5, and in a second case after six hours of treatment, when the patient had received a total of 40,000 units, the ratio of long to short forms was 1 to 3 where originally it had been 1 to 10. No long forms were found before treatment in a third case, but three hours after 20,000 units of penicillin was administered there were two long forms to each short form. Altogether 5 patients have been studied, and in each the behavior of the spirochetes was similar.

The short forms were from 7 to 12 microns in length, while the long forms were from 14 to 22 microns. The long forms were in general less motile than the short forms and were occasionally angulated at the middle. At the point of angulation some organisms showed a small zone of thickening. In other instances it looked as if two short forms were hooked together.

As this phenomenon has attracted the attention of several observers in the laboratory, it apparently occurs with a certain degree of regularity and is probably significant.

In the light of the changes in form of bacillary organisms following contact with penicillin, one wonders whether the elongation of the spirochetes found in these cases may not be an indication of excessive growth and delayed cellular division. Although the mode of division of Treponema pallidum remains conjectural, one might assume from the increase in the number of long forms and the alteration in contour at the point of angulation which was observed in some of the long forms that the organism may possibly divide by binary fission.

INHIBITION OF PENICILLIN ACTION

The growth inhibiting properties of penicillin may be inactivated, or even destroyed, by substances of microbial origin. A fundamental understanding of such inhibitors and the mode of their action might shed some light on the mechanism whereby penicillin affects bacterial growth. The mode of action of the sulfonamides was indicated by the discovery that a substance contained in yeast, later identified as para-aminobenzoic acid, inhibits the action of sulfonamides on susceptible organisms.[32]

The existence of an inhibitory substance specific against penicillin was first demonstrated by Abraham and Chain,[33] who found that Escherichia coli, a gram-negative organism insensitive to penicillin, contained an enzyme-like substance which destroyed the growth inhibiting property of penicillin. This substance they called penicillinase. It was found, however, that penicillinase is not the sole factor determining the sensitivity of an organism to penicillin; in fact, penicillinase may be found in organisms sensitive to penicillin. Furthermore, an increase in tolerance to penicillin need not be accompanied by the production of penicillinase.[34] It is of interest, nevertheless, that most organisms commonly recognized as pathogens do not produce penicillinase, regardless of their sensitivity or insensitivity to penicillin.

Kirby [35] has reported the finding of a penicillin-destroying staphylococcus as a contaminant in a culture of Aspergillus flavus, and also a highly potent inactivator from a strain of penicillin resistant staphylococcus obtained from clinical sources, presumably the product of bacterial metabolism.

As the development of sulfonamide resistance by some strains of staphylococcus is related quantitatively to the production of para-aminobenzoic acid, these observations may have some significance as related to the possible mode of action of penicillin. In general, however, there is as yet little evidence to suggest the pos-

28. Borodulina, J. A.: Interrelations of Soil Actinomyces and B. Mycoides, Microbiologica **4**: 561, 1935.
29. Gardner, A. D.: Morphological Effects of Penicillin on Bacteria, Nature **146**: 837 (Dec. 28) 1940.
30. Miller, C. P.; Scott, W. W., and Moeller, V.: Studies on the Action of Penicillin: The Rapidity of Its Therapeutic Effect on Gonococcic Urethritis, J. A. M. A. **125**: 607 (July 1) 1944.
31. Cohn, A., and Kornblith, B. A.: Penicillin Therapy of Sulfonamide Resistant Gonococcic Infections and Associated Complications in the Male: A Schedule of Treatment for Ambulatory Patients, Am. J. Syph., Gonor. & Ven. Dis. **29**: 334 (May) 1945.
32. Woods, D. D.: The Relation of p-Aminobenzoic Acid to the Mechanism of the Action of Sulfanilamide, Brit. J. Exper. Path. **21**: 74 (April) 1940.
33. Abraham, E. P., and Chain, E.: An Enzyme from Bacteria Able to Destroy Penicillin, Nature **146**: 837 (Dec. 28) 1940.
34. Bondi, A., Jr., and Dietz, C. C.: Relationship of Penicillinase to the Action of Penicillin, Proc. Soc. Exper. Biol. & Med. **56**: 135 (June) 1944.
35. Kirby, W. M. M.: Properties of a Penicillin Inactivator Extracted from Penicillin Resistant Staphylococci, J. Clin. Investigation **24**: 170 (March) 1945.

sibility of competitive enzyme systems as a basis for the action of penicillin.

A number of workers have succeeded in developing penicillin resistant strains of bacteria by cultivation in increasing concentrations of penicillin, but the nature of this acquired resistance is unknown.[34] Strains of coagulase positive staphylococci are occasionally identified which possess a natural resistance to penicillin, and others may acquire a temporary resistance.[36] Certain lots of clarase, a diastatic enzyme preparation, may inactivate penicillin. The potency of this substance was attributed to the presence of bacterial products, especially of Bacillus subtilis.[37]

Penicillin can also be inactivated by various sulfhydryl compounds, among them thioglycolic acid and cysteine. This has brought Cavillito and Bailey [38] to believe that the main mode of action of many antibiotic substances rests in their ability to interfere with the normal function of sulfhydryl groups in bacterial metabolism. When penicillin was brought in contact with an excess of neutralized cysteine hydrochloride, it rapidly lost its antibiotic activity.

Inactivation by cysteine may involve any one or more of the reactive groups in the cysteine molecule, namely the amino, the carboxyl and the sulfhydryl groups. As several of the amino acids (aminoacetic acid, cystine, methionine and serine) did not modify the activity of penicillin, and as cysteine was a more potent inactivator than thioglycolic acid, Chow and McKee [39] came to the conclusion that the inactivation by cysteine may involve both the sulfhydryl and the amino groups of the cysteine molecule.

Inhibition of antibiotics other than penicillin by certain sulfhydryl compounds has been repeatedly demonstrated. Of particular interest in this connection is the work of Geiger and Conn.[40] These workers studied the effect of cysteine and thioglycolate on clavacin and penicillic acid, as well as on some other alpha, beta unsaturated ketones which were shown to have antibacterial activity. Both of these reducing agents diminished the antibacterial activity of those ketones with which a chemical reaction involving the sulfhydryl group occurs (as shown by the disappearance of the nitroprussic acid test for —SH). Similar results were obtained by Colwell and McCall,[41] who showed that the antibacterial action of menadione (2-methyl-1, 4-naphthoquinone), as well as that of its 3-chloro and 6-methyl derivatives, could be suppressed by thioglycolate and cysteine. These three substances were shown to react with —SH compounds. In contrast to these results, however, the antibacterial activity of 2-methyl-3-methoxy-1, 4-naphthoquinone remained unaffected by cysteine, and no evidence for a reaction between these two substances in vitro could be obtained.

The facts just summarized can be explained by assuming that the inhibition of antibiotics by sulfhydryl compounds occurs as the result of a chemical reaction involving the two substances and leading to the formation of an inactive reaction product. They do not require the hypothesis that the action of the inhibitor is the restoration of normal equilibrium conditions to an enzyme system involving —SH compounds, which was previously disturbed by the antibiotic. Indeed, the results obtained by Colwell and McCall with 2-methyl-3-methoxy-1, 4-naphthoquinone, as well as some of the data of Geiger and Conn, are in direct contradiction to this view.

The antibacterial action of the quinones is of interest in this connection because of the presence of the quinone structure in some antibiotic agents. The synthetic menadione was shown to be bacteriostatic and bactericidal for both gram-positive cocci and gram-negative bacilli.

The similarity of the effects of sulfhydryl compounds on penicillin and the arsenicals may be indicative of a possible similarity in the modes of action of the two types of antispirochetal agents. It is important to note, however, that significant differences exist with respect to such effects. While the inactivation of penicillin by cysteine proceeds slowly, the addition of this substance to suspensions of Treponema pallidum exposed to the action, for example, of arsphenamine results in the immediate inhibition of the antispirochetal action. The fact that the arsenicals can be regarded as general protoplasmic poisons, while penicillin is not, may also be an indication of the essentially dissimilar nature of their respective modes of action.

ADAPTATION OF MICRO-ORGANISMS TO PENICILLIN

The phenomenon of induced bacterial resistance to the sulfonamides has been adequately demonstrated in connection with gonococcic infections in man.[31] Adaptation of the gonococcus to the sulfonamides, however, does not affect its sensitivity to penicillin, so that sulfonamide resistant infections are readily responsive to treatment with penicillin.

It is possible by suitable laboratory procedures to increase the tolerance of bacteria to penicillin. Abraham and his associates [17] increased the resistance of a strain of Staphylococcus aureus as much as a thousand fold by subculturing at increasing concentrations of penicillin. McKee and Houck [42] increased the resistance of a staphylococcus to a point six thousand times as high as that of the parent strain by sixty serial passages through concentrations of penicillin barely inhibitory to growth. Neither Streptococcus pyogenes nor the pneumococcus was so readily altered in tolerance as was the staphylococcus. Increase in resistance was accompanied by a corresponding loss of virulence of the organisms tested. This is in contrast to the sulfonamide resistant cultures which retain their virulence.

The increased tolerance to penicillin as well as the decreased virulence of the organisms apparently was a permanent characteristic. It was unaffected either by passage through susceptible animals or by rapid culturing in blood broth or by two months' storage. The organisms made resistant to penicillin retained their sensitivity to the sulfonamides, gramacidin, gliotoxin and aspergillic acid.

There is also some evidence which would indicate that bacterial resistance to penicillin may be increased

36. Spink, W. W.; Hall, W. H., and Ferris, V.: Clinical Significance of Staphylococci with Natural or Acquired Resistance to the Sulfonamides and to Penicillin, J. A. M. A. **128:** 555 (June 23) 1945.

37. Lawrence, C. A.: Sterility Test for Penicillin, Science **98:** 413 (Nov. 5) 1943.

38. Cavallito, C. J., and Bailey, J. H.: Preliminary Note on the Inactivation of Antibiotics, Science **100:** 390 (Oct. 27) 1944.

39. Chow, B. F., and McKee, C. M.: Inactivation of the Antibiotic Activity of Penicillin by Cysteine Hydrochloride: Chemical Aspects of Inactivation, Proc. Soc. Exper. Biol. & Med. **58:** 175 (Feb.) 1945.

40. Geiger, W. B., and Conn, J. E.: The Mechanism of the Antibiotic Action of Clavacin and Penicillic Acid, J. Am. Chem. Soc. **67:** 112 (Jan.) 1945.

41. Colwell, C. A., and McCall, M.: Studies on the Mechanism of Antibacterial Action of 2-Methyl-1, 4-Naphthoquinone, Science **101:** 592 (June 8) 1945.

42. McKee, Clara M., and Houck, Carol L.: Induced Resistance to Penicillin of Cultures of Staphylococci, Pneumococci and Streptococci, Proc. Soc. Exper. Biol. & Med. **53:** 33 (May) 1943.

in animals,[43] but thus far the development of resistance in man has been of minor importance.[36]

Mechanism of Bacterial Adaptation.—Studies on the tolerance of various strains of the gonococcus to sulfathiazole have furnished some indication of the way in which this organism has acquired an increased resistance to the sulfonamides.

According to Lankford [44] there is considerable evidence that naturally resistant strains of the gonococcus have been selected by the gradual elimination of the more susceptible organisms through treatment with the sulfonamides. The opportunity of selection was afforded by a wide range in the sensitivity of the gonococcus. As a consequence, the naturally resistant variants have survived to propagate the infection. As the process of elimination has continued, gonococcic infections have shown a steadily increasing tendency to become sulfonamide resistant.

Whether this theory fully explains the phenomenon or whether some subtle alteration in the metabolism of the bacterial cell may contribute to the increase in resistance is a question which has not been answered.

Spirochetal Adaptation to Penicillin.—An increased tolerance to penicillin of a virulent strain of Treponema pallidum has been reported by Dunham, Hamre, McKee and Rake.[11] Organisms recovered from a rabbit experimentally infected with the Nichols stain of Treponema pallidum and treated with amounts of penicillin insufficient to destroy the infection exhibited an increased resistance as measured by their motility. In tests with the original strain, 1,600 units of penicillin per 0.8 cc. immobilized from 62 to 81 per cent of the spirochetes, but only 6 to 18 per cent of those organisms recovered from the insufficiently treated animals were immobilized.

While these observations are of considerable interest, the problem in general of the resistance, or adaptation, of Treponema pallidum to therapeutic agents, whether arsenical or antibiotic, awaits further investigation for its ultimate solution. Essentially, very little is known of the habits of Treponema pallidum; its constitution, its mode of reproduction, as well as its entire life cycle are yet to be defined.

There are individuals with syphilitic infections which are resistant to treatment, as evidenced chiefly by infectious or serologic relapse. This is true of the more conventional therapeutic agents, such as the arsphenamines, and it is also proving to be true of penicillin.

Whether this resistance to treatment is the result of an infection with organisms of high native tolerance to the therapeutic agent or whether the native tolerance of the spirochete can be increased by exposure to subcurative amounts of the therapeutic agent are still unanswered questions. There is no knowledge of the relative sensitivity of various strains of Treponema pallidum as there is of many of the pathogenic bacteria. One would expect, however, that variations do exist and that they may be important factors in the individual's response to treatment. Nevertheless, in the interpretation of the failures of treatment it is necessary to consider the fact that the resistance of the host may play an equally, or even more, important part in the response to treatment than may the sensitivity of the infecting organism.

43. Schmidt, L. H., and Sesler, C. L.: Development of Resistance to Penicillin by Pneumococci, Proc. Soc. Exper. Biol. & Med. **52**: 353 (April) 1943.

44. Lankford, C. E.: Quoted by Frazier, C. N.: Microbial Adaptation to Penicillin, Texas Rep. Biol. & Med. **2**: 385, 1944.

PENICILLIN TREATMENT OF THE SYPHILITIC PREGNANT WOMAN

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This report supplements our observations recorded in THE JOURNAL in the fall of 1944.[1] In general, our enlarged experience has tended to confirm the initial impression that sodium penicillin given by intramuscular injection is very satisfactory treatment for the syphilitic pregnant woman to prevent congenital infection of the fetus and that it may rapidly become the treatment of choice in this condition. Considerable progress has also been made in arriving at a satisfactory regimen for the infant infected with syphilis. The latter problem has seemed considerably more complex to work out than has been the treatment of syphilis in the adult with penicillin, largely because of the severity of the disease frequently encountered in the newborn in contradistinction to the adult, and because of the theoretical dangers inherent in the injudicious use of a rapidly spirillicidal drug under such circumstances. This study is still in progress and much is yet to be learned in the application of penicillin to both of these phases of syphilis. Nonetheless, as the material is accumulating a conservative appraisal of our existing knowledge seems worth while. The present paper deals with our increasing experience in the management of the syphilitic pregnant woman. Our advanced knowledge in the care of the syphilitic infant will be the subject of a separate report.

PENICILLIN TREATMENT OF THE PREGNANT WOMAN

Material.—To date we have treated 49 pregnant women with penicillin. Forty of these are Negro and 9 are white. For the most part they are young primiparas with a recently acquired infection. The oldest pregnant woman we have treated with penicillin is 36, the youngest 15, the average age is 19 years, and 21 of the total are less than 20 years of age. Two of the patients had primary syphilis, 1 in the seronegative stage at the commencement of therapy; 24 had secondary syphilis and 19 had early latent syphilis (the duration of which was known to have been less than four years).[2] This type of material was selected for the most part because it would give the greatest expectancy of infection of the fetus if the treatment proved unsuccessful. Our experience also includes the treatment of 3 women with late latent syphilis (the duration of which was more than four years) and 1 case of late congenital syphilis, treatment of which was given for interstitial keratitis. In these instances pregnancy was an incidental finding and not the primary reason for

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From the Institute for the Control of Syphilis, University of Pennsylvania. The work described in this paper was done under a contract recommended by the Committee on Medical Research between the Office of Scientific Research and Development and the University of Pennsylvania.

1. Lentz, J. W.; Ingraham, N. R., Jr.; Beerman, H., and Stokes, J. H.: Penicillin in the Prevention and Treatment of Congenital Syphilis, J. A. M. A. **126**: 408 (Oct. 14) 1944.

2. These patients were contributed from the following sources: Philadelphia General Hospital 24 cases, Hospital of University of Pennsylvania 15 cases, Pennsylvania Hospital 8 cases, Graduate Hospital 1 case, private practice of one of the co-authors 1 case.

administration of penicillin treatment. The results of the outcome of these pregnancies are less useful in determining the value of penicillin in preventing transfer of the infection from mother to child.

Treatment.—Forty-six of the 49 patients had received no previous treatment for syphilis and 3 had received some treatment with arsenical and bismuth preparations prior to pregnancy but not during it. One of these last was the patient with congenital syphilis who had received injection therapy for her interstitial keratitis; the other 2 presented latent syphilis and had received only a few weeks of treatment considerably prior to conception, insufficient it was felt to influence materially the course of the disease.

Specific therapy during the pregnancy was with penicillin only, 10 patients receiving a total dosage of 1.2 million Oxford units of sodium penicillin and 30 receiving a total of 2.4 million Oxford units. The treatment of the remaining 9 patients was individualized and not according to a definite schedule. The drug has in every instance been administered intramuscularly in distilled water, in the cases first studied at four hour intervals, but more recently at three hour intervals. In the majority of instances the initial dosage has been reduced to about one-fourth the maximum dose for the first forty-eight hours; subsequent dosage has been from 20,000 to 50,000 Oxford units per injection. The total duration of treatment for the most part has been from seven to nine days, the length of the course being determined by the size of the initial dosage. In several instances the treatment was prolonged over a period of ten to twelve days. The treatment described, except for the lowered initial dosage, is similar to that used by Mahoney and his co-workers in the treatment of early syphilis in the adult and is in accord with the recommendations of the Penicillin Panel of the Subcommittee on Venereal Diseases, National Research Council.[3]

The type of treatment of the remaining 9 patients was as follows: Three (82, 105, 135) received a total dosage of 1.2 million Oxford units of sodium penicillin in four days. In 2 of these this dosage proved to be inadequate and retreatment with 2.4 million units in seven and one-half days was carried out in each instance. One patient (130) relapsed after receiving an initial dose of 2.4 million Oxford units in seven and one-half days and required two subsequent courses totaling 6.4 million Oxford units to control her disease. Four patients (326, 365, 367, 405) each received two courses of 2.4 million Oxford units of penicillin prior to delivery, because of failure of immediate serologic response. Our subsequent observations indicate that this retreatment may have been unnecessary. One patient (336) received 1 million units of penicillin, following which treatment was discontinued because of threatened abortion. This patient received an additional 1.2 million units three months later and prior to confinement. It should be pointed out that throughout the course of this study we have been more concerned in learning whether penicillin as such is effective in the prevention of congenital syphilis than in determining the exact or optimum dosage required. We have felt it better to give too much than too little of the drug and have not desired to experiment with smaller doses at great possible risk for the child. We have been guided by the doses which have been found effective in the treatment of early adult syphilis not complicated by pregnancy, have used the larger rather than the minimal dose and have retreated the patient on slight pretext.

Initial treatment with penicillin was given in various stages of the pregnancy: prior to the sixteenth week 4 cases, between the sixteenth and thirty-second week 26 cases, after the thirty-second week 9 cases. Since fetal infection is considered to occur any time after the sixteenth week and to become increasingly more probable as term approaches, the distribution of cases throughout the pregnancy as indicated should give a fair appraisal of the value of penicillin in any stage.

Treatment Reactions.—The only reaction of note encountered in the treatment of the syphilitic pregnant woman was threatened abortion. This type of complication was mentioned briefly in our previous article [1] on this subject as being in all probability a species of therapeutic shock and we are now able to give a little more light on the probable frequency of its occurrence. One patient (211) with early latent syphilis and in the fourth month of her pregnancy aborted on the fourth day after penicillin therapy was commenced. In this instance initial dosage had been 12,500 Oxford units every four hours for the first day and 25,000 units every four hours the next two days, at which time it was increased to 50,000 units per injection. Lower abdominal pain and spotting commenced on the second day. It was, of course, difficult to know in this instance whether the fetus was living when treatment was started or whether the outcome would have been the same if penicillin was withheld when first symptoms developed. In a later case (336) with secondary syphilis and also in the fourth month vaginal bleeding likewise developed on the second day after the commencement of treatment and persisted to the fifth day, when treatment was stopped. During this period the patient had received 1 million units of penicillin: 20,000 Oxford units every three hours for the first twenty-four hours and 40,000 units every three hours thereafter. Abortion did not occur, and she was retreated in the seventh month of her pregnancy with 1.2 million Oxford units in seven and one-half days without ill effect.[3a] Patient 287, a woman with early latent syphilis, delivered a macerated stillborn fetus seven days after the commencement of her penicillin treatment and two months prior to her calculated date of confinement. In this instance it was felt that the fetus was not living when penicillin was started, a circumstance which should always be carefully ascertained if possible in commencing antisyphilitic therapy in the pregnant woman. Two other patients in this series (39, 315) developed lower abdominal cramps, vaginal bleeding and signs of threatened abortion during the penicillin course, and 1 other patient (57) developed severe abdominal cramps without bleeding, necessitating considerable sedation and active gynecologic supervision. Milder forms of lower abdominal discomfort were not uncommon during the first twenty-four to forty-eight hours, often accompanied by a febrile Herxheimer reaction. We accordingly feel that the possibility of abortion is a very real threat to some pregnant syphilitic women treated with penicillin, to be anticipated and avoided by reduction of initial dosage

3. Mahoney, J. F.; Arnold, R. C., and Harris, A.: Penicillin Treatment of Early Syphilis: A Preliminary Report, Ven. Dis. Inform. **24**: 355 (Dec.) 1943. Mahoney, J. F.; Arnold, R. C.; Sterner, B. L.; Harris, A., and Zwally, M. R.: Penicillin Treatment of Early Syphilis, J. A. M. A. **126**: 63 (Sept. 9) 1944. Moore, Mahoney, Schwartz, Sternberg and Wood.[5]

3a. This mother subsequently proved not to be pregnant. It is not certain whether the woman miscarried following the initial course.

for forty-eight hours, bed rest, sedation as necessary and temporary suspension of the penicillin if bleeding develops.

CLINICAL AND SEROLOGIC RESPONSE IN THE MOTHER

In all instances in which the mother had evidence of early syphilis at the start of treatment, these signs and symptoms have promptly disappeared. In only 7 instances, on the other hand, among the 40 pregnant women treated with penicillin who have thus far reached term had the blood serologic test for syphilis in the mother become negative before the baby was born. Considering the uniformly favorable ultimate outcome, to be given in more detail later, it may accordingly be concluded that a reversal to negative during the antepartum period is not necessary to obtain a normal infant.

The clinical and serologic follow-up of these cases was as outlined: A quantitative titered blood serologic test was made for syphilis reagin at the commencement of the penicillin treatment and at its completion. This test was repeated in two weeks and then at monthly intervals as long as positive. A complete physical inspection for evidence of surface lesions and a brief inquiry as to symptoms were made at each visit. After the blood test became negative it was repeated once at monthly intervals and then at three months intervals for the duration of the study. To the time of compiling this material 10 mothers had been observed for periods of one year or more after treatment with penicillin, 17 between six months and one year and 22 for less than six months. The average duration of follow-up after treatment is seven months, and 1 mother has been observed for seventeen months.

Only 20 of the 49 patients have developed persistently negative serologic tests. Time has seemed to be more a factor than dosage in bringing about these favorable results, since those which have been observed the longest are for the most part those who have received the smaller dosage (i. e. 1.2 million Oxford units). We, of course, have been unable to control the type, purity or spirillicidal value of the penicillin as such and, in fact, have used a variety of different lots and brands in these studies. The work of Dunham and Rake [4] indicates that such a consideration may be of more than passing importance. The time factor is shown in the accompanying table.

In the 1 instance in the table in which seronegativity was not obtained by the end of one year, the titer of the test is very low: less than 1 unit of syphilis reagin; in the six month to one year group 2 of the 13 cases still seropositive exhibit less than 1 unit of reagin. The average length of time from the start of penicillin treatment until a definite sustained drop was noted in syphilis reagin in the mother's blood serum as revealed by quantitative titered Kolmer, Wassermann and Kline tests was sixty days. The average length of time after penicillin until sustained seronegativity was obtained in the 20 cases which have thus far become seronegative was one hundred and ninety days. The most rapid reversal to complete and sustained seronegativity was in the single case which was seronegative but dark field positive at the commencement of treatment. This case (386) became temporarily positive with quantitative titer as high as 4 units of syphilis reagin during the course of penicillin therapy but reverted to negative by the twenty-second day and remained so. Of those cases which were definitely seropositive at the initiation of treatment the earliest sustained complete reversal to negative observed was on the sixty-fourth day, a case (350) of early latent syphilis treated with 2.4 million units of penicillin. The case (96, secondary syphilis treated with 2.4 million units of penicillin), which remained positive longest after penicillin but eventually reversed to sustained seronegativity was noted to have its first negative reaction on the three hundred and sixty-fifth day.

These results would seem to indicate that the pregnant syphilitic woman with early syphilis, treated with penicillin, may be expected to remain seropositive even though the treatment is apparently effective, for as long as six months to one year after the treatment is completed. The serologic response here noted is considerably slower than that recorded by Moore and the National Research Council's Penicillin Panel [5] for early syphilis as a whole. They found an apparent trend to serologic reversal in a period of about twenty days after the start of treatment as compared to sixty days in the present series. Further, when 1.2 million units of penicillin was used, the mean serologic response reached negativity at about the seventieth day as compared to the one hundred and ninetieth day in the present series. Whether this slower response is the result of biologic factors associated with pregnancy makes interesting speculation, but definite conclusions must await further observation. The total number of cases observed is small; the effective amount of "penicillin" for syphilis in the crude product awaits satisfactory standardization; variations in the sensitivity of the tests employed in various laboratories may all be playing as important a role in influencing this apparent tendency to delayed serologic response as is pregnancy itself.

Serologic Response of 49 Pregnant Women Treated with Penicillin

(For dosage range see text)

Period of Observation After Penicillin	Patients with Still Positive Serologic Tests		Patients with Negative Serologic Tests	
	Number	Per Cent	Number	Per Cent
1. More than 1 year.....	1	10	9	90
2. Between 6 months and 1 year	13	76	4	14
3. Less than 6 months.....	15	65	7	35

CLINICAL AND SEROLOGIC RELAPSE IN THE MOTHER

Among the 49 cases there have been 2 which have relapsed clinically and 1 which has relapsed serologically. There have also been 4 cases, as already mentioned, that have been retreated because of failure to obtain any serologic response from the initial course of 2.4 million Oxford units of penicillin. Two of these retreated cases were of early latent syphilis (326, 367) retreated five and one-half months and four and one-half months after initial therapy. The other 2 were secondary syphilis (cases 365, 405) retreated four months and three months respectively after initial treatment.

4. Dunham, W. B., and Rake, G.: The Relative Activity of Partially Purified Penicillin and of Crystalline Penicillin G on Treponema Pallidum, Am. J. Syph., Gonor. & Ven. Dis. **29**: 214 (March) 1945.

5. Moore, J. E.; Mahoney, J. F.; Schwartz, W.; Sternberg, T., and Wood, W. B.: The Treatment of Early Syphilis with Penicillin, J. A. M. A. **126**: 67 (Sept. 9) 1944.

To judge from the analysis in the preceding section, in each of these instances it may have been too soon to expect noticeable serologic response, and retreatment may have been unnecessary. Nonetheless with the child's life at stake we preferred to adopt a conservative attitude and to leave no stone unturned in obtaining a healthy infant. A very brief summary of the treatment and the serologic and clinical response in each of the relapsing cases follows:

CASE 105.—*Relapsing secondary syphilis at time of delivery. Infant infected.*

A Negro woman aged 21 was diagnosed as having secondary syphilis and received 1.2 million Oxford units of sodium penicillin from May 24 to May 28, 1944. The titer of her blood serologic test to the quantitative Kolmer Wassermann technic was 128 units at the commencement of therapy. Her intial secondary eruption healed within ten days, but there was no reduction in the blood serologic test up to the time of confinement. She was delivered of a physically normal full term infant on September 23 but while on the delivery table was noted to have condylomata lata, which proved on subsequent study by dark field illumination to contain Treponema pallidum. She was given a second course of 2.5 million Oxford units of sodium penicillin, which served to heal her genital lesions, but there has still been no reduction in blood serologic titer to the time of the last test, June 1, 1945. Her infant had 64 units of syphilis reagin in its blood when born. This rapidly dropped to 2 units within the next seven weeks but then rapidly rose to 256 units. The roentgenogram of the infant's long bones was normal during the neonatal period but showed early osteochondritis at 6 weeks and advanced changes at nine weeks. Dark field positive skin lesions developed in the third month, and treatment with penicillin was commenced on the infant Dec. 20, 1944. The initial clinical response in the infant to penicillin was good, and his first negative blood serologic test was obtained June 1, 1945.

CASE 130.—*Relapsing secondary syphilis four weeks after delivery. Infant apparently normal.*

A Negro woman aged 25 was treated for secondary syphilis with 2.4 million Oxford units of sodium penicillin in seven and one-half days starting June 15, 1944. The initial quantitative titer of her blood serologic test as determined by the Kolmer Wassermann technic was 32 units, which is lower than is usually obtained in active secondary syphilis. This declined immediately, being 8 units on July 6 and between 2 and 4 units in mid-August. On September 29 her blood serologic titer had risen to 64 units and she developed dark field positive surface lesions. On October 21 she received a second course of 2.4 million units of sodium penicillin and when serologic response was not evident an additional course of 4 million Oxford units of sodium penicillin was given over a period of six days (January 1945). Her blood serologic test for syphilis was negative for the first time May 21, 1945. Her infant was born Sept. 1, 1944 before her infectious relapse. He had a negative blood serologic test at the time of delivery and apparently escaped infection. He was separated from the mother during her infectious relapse period and was normal to physical and roentgenologic examination and had a negative blood serologic test when last examined, April 27, 1945.

CASE 432.—*Early latent syphilis, treated in last week of pregnancy. Seroreclapse in mother. Infant apparently normal at two months post partum.*

A Negro woman aged 18 received 2.4 million Oxford units of sodium penicillin starting on March 20, 1945. Her pretreatment blood serologic titer was 128 units (Kolmer titered Wassermann). She was delivered of a clinically normal infant with 32 units of syphilis reagin in his blood stream on March 28, 1945. The infant's titer had dropped to less than 1 unit by May 11 and was completely negative on May 25. He was normal to physical examination and a roentgenogram of the long bones was negative through this period. There is still some possibility that this infant may be syphilitic but the chances are remote: statistically not greater than 5 per cent. The mother's blood serologic titer receded rapidly following her penicillin treatment. It was significantly reduced below the initial 128 units on March 31 and was completely negative on May 11. Since then it has increased rapidly and on May 26 and June 1, 1945 was between 128 and 256 units, as high as at any period in our observation. Retreatment has been ordered but not yet carried out at the time of this writing. She has shown no surface lesions during this period.

Twenty-seven of our pregnant women have been observed for periods of more than six months after their penicillin treatment. Limiting the study to this group, the clinical and serologic relapse rate among the mothers has been 3 in 27, or 11 per cent.

SYPHILIS STATUS OF THE NEWBORN INFANTS

Of the 49 women in this study treated with penicillin, 39 have at the time of compilation of these data reached the termination of their pregnancy. One woman has completed two pregnancies during the course of this study. Of these 40 confinements 37 have resulted in the birth of apparently normal children, 1 in an abortion prior to the sixteenth week and 1 in a miscarriage after the midpoint in the pregnancy. These last 2 are cases 211 and 287, described in a previous section, and could not be attributed to penicillin failure in the strict sense of the term. Only 1 living syphilitic child was born.

The postnatal medical follow-up has been active and has consisted in the following: At the time of birth, a cord Wassermann test was taken and in many instances dark field examination of the umbilical vein was performed.[6] The latter procedure was carried out routinely when the study was started, but as it became apparent that penicillin was an effective spirillicidal agent in the pregnant woman and that the infants were uniformly normal it was felt that this procedure was superfluous and it was discontinued. The blood serologic test was repeated uniformly on the infant within the next week, before discharge from the maternity nursery. A roentgenogram of the long bones of one upper and one lower extremity was also carried out routinely at about the fifth day. If the blood serologic test for syphilis obtained on the infant in the maternity nursery was positive, this test was repeated at the age of 3 weeks and weekly thereafter until it became definitely negative or, in the syphilitic infant, until a definite increase in titer was observed. A roentgenogram of the long bones was repeated on all infants at the age of 6 weeks. Infants seronegative at birth and seropositive infants who subsequently became seronegative were uniformly subjected to a blood serologic test at the age of 1 month, 2 months, 3 months and 6 months and then at three month intervals for the duration of the study. Complete physical examinations were performed at each visit.

Since this is an interim report in a continuing study, all infants born have not as yet completed a satisfactory term of postnatal observation. The adequacy of this aspect of the study may be gaged by the following figures: The maximum duration of postpartum follow-up of the infant is three hundred and eighty-eight days and the average duration is five months. Three infants have been followed more than one year, 11

6. Ingraham, N. R., Jr.: Congenital Syphilis: Diagnosis by Means of Dark Field Examination of Scrapings from the Umbilical Vein, J. A. M. A. **105**: 560 (Aug. 24) 1935.

between six months and one year, 13 between two and six months and 11 for periods of less than two months. It is our feeling that those infants followed for one year have had their status with respect to syphilis definitely established; for the infants followed for six months or more the diagnosis normal (or nonsyphilitic) is presumptively correct; for infants followed for more than two months with the procedure as outlined it is unlikely that the diagnosis will have to be modified; but a follow-up period of less than two months must be considered completely inadequate in determining the syphilis status of the infant.

Fourteen (38 per cent) of the 37 infants born alive and physically normal to date had positive blood serologic tests at the time of delivery. This percentage is somewhat higher than in previous series reported from these same clinics,[7] which have ranged from 6 to 16 per cent. It is probably accounted for by the fact that the mothers all had early syphilis and in most instances still showed relatively high titers to the quantitative tests employed at the time of delivery. In every instance in which the infant was positive, the mother was also seropositive at the time of delivery. The degree of positiveness in the infant's blood in quantitative Kolmer, Wassermann and Kline units has ranged from 32 to less than 1. Excluding the only syphilitic baby, in those infants which have been followed for more than one month postnatally the initially positive tests reverted to complete negativity in twenty-nine days on an average. Only 3 cases required more than one month to become normal: case 124, thirty-two days; case 301, fifty-one days; case 432, fifty-eight days. The clinical course of the only syphilitic infant appearing in this series thus far is given in the detailed report of case 105. Again, except for the syphilitic infant, all roentgenograms of the long bones performed in the nursery or at 6 weeks or later have been normal. Physical examinations have shown no evidence of syphilis.

The infant offspring in case 25 died at the age of 7 months from an acute febrile illness the exact nature of which was not determined but which could not apparently be attributed to syphilis. The mother, a Negro woman aged 18, had received 1.2 million Oxford units of sodium penicillin in divided dosage over a period of seven and one-half days, for dark field-positive, seropositive secondary syphilis from Jan. 10 to 18, 1944. Her clinical response was normal. She gave birth to an apparently normal child on April 13, 1944 who had 16 units of syphilis reagin in his blood stream during the immediate neonatal period. This test had become negative by the twentieth day and remained negative to repeated testing thereafter. The physical findings in the infant and the roentgenograms of the long bones were likewise normal. In the latter part of October of the same year the infant was returned to the hospital with an acute febrile illness and died within three days on October 24. An autopsy did not reveal the exact cause of death, but no evidence of syphilis was revealed to detailed gross and microscopic examination of the organs, including silver stain for Treponema pallidum. It was felt that this death was not caused by syphilis and that it did not constitute a penicillin failure.

Case 13, contained in table 1 of our previous report,[1] is of particular interest because the mother gave birth to a second apparently normal infant on March 29, 1945, exactly one year after the birth of her first child, which is likewise still normal. This 29 year old Negro woman was treated for secondary syphilis with 1.2 million Oxford units of sodium penicillin in seven and one-half days commencing Dec. 16, 1943. She has received no treatment for her syphilis since and went through her second pregnancy without specific therapy. The blood serologic tests and roentgenograms of the infant born March 29, 1945 have remained normal to June 12, 1945. Although follow-up of the infant (two and one-half months) postnatally could not as yet be considered adequate, the preliminary indications are that the mother has been cured of her disease by this single course of penicillin and that treatment in subsequent pregnancies is probably unnecessary.

SUMMARY OF PRESENT STATUS OF KNOWLEDGE IN TREATMENT OF SYPHILITIC PREGNANT WOMEN WITH PENICILLIN

In the material available at the time of the compilation of these data, among 27 infants followed for periods of more than two months postnatally, many for much longer periods, 24 born of mothers with early syphilis treated with penicillin during their pregnancy, only 1 has been shown to be infected with syphilis. This success, which approaches 97 per cent if borne out by further observation as the study progresses, indicates a result at least equal to that obtained by the arsenical-bismuth regimen now generally employed in the prevention of congenital syphilis. The treatment may, moreover, be given in a single course over a short period and is apparently curative of the mother's disease at the same time as it prevents transfer from mother to fetus in utero. We cannot be certain at this writing whether this success is as applicable to the commonly occurring latent syphilis of unknown duration in the pregnant woman as it is to early syphilis in pregnancy, since our experience covers to date almost exclusively the latter. It is now demonstrated through laboratory evidence [8] that penicillin will pass from the maternal to the fetal blood stream at term. There is some indirect clinical evidence in the present study to indicate that penicillin may traverse the placental barrier earlier in the pregnancy in that 9 of the women in the present series were treated after the thirty-second week of the pregnancy with uniformly good results when the possibility of infection of the fetus would be presumably high. Since the fetus may be infected anytime after the sixteenth week, the permeability of the placenta to penicillin from the fourth to the ninth lunar month is a critical issue in the prevention of congenital syphilis by a single course of the drug during pregnancy.

Although it is yet not possible to draw definite conclusions as to the preferred method of treatment of the pregnant woman with syphilis, our experience with penicillin is such as to give definite impressions. Our only treatment failure with the infant occurred in a patient who received her total therapy in a four day

7. Ingraham, N. R., Jr.: The Diagnosis of Infantile Congenital Syphilis During the Period of Doubt, Am. J. Syph. & Neurol. **19:** 547 (Oct.) 1935. Ingraham, N. R., Jr.; Shaffer, B.; Spence, B. E., and Gordon, J. H.: The Adequate Diagnosis of Infantile Congenital Syphilis, Arch. Dermat. & Syph. **43:** 323 (Feb.) 1941. Ingraham, N. R., Jr.: The Management of Syphilis in the Newborn and During Early Childhood, Pennsylvania M. J. **42:** 920 (May) 1939.

8. Herrell, W. E.; Nicholas, D. R., and Heilman, Dorothy H.: Penicillin: Its Usefulness, Limitations, Diffusion and Detection, with an Analysis of 150 Cases in Which It Was Employed, J. A. M. A. **125:** 1003 (Aug. 12) 1944. Greene, H. J., and Hobby, G. L.: Transmission of Penicillin Through Human Placenta, Proc. Soc. Exper. Biol. & Med. **57:** 282 (Nov.) 1944.

of the long bones was negative through this period. There

Dark Field Examination of Scrapings from the Umbilical Vein, J. A. M. A. **105**: 560 (Aug. 24) 1935.

period. We feel that treatment should be prolonged for at least seven and one-half days, as is now usually recommended for early syphilis in the adult, and possibly a little longer. There is no real indication that 2.4 million Oxford units given over the longer interval (seven and one-half to twelve days) is any more successful in preventing congenital syphilis and in curing the disease in the mother than is 1.2 million units in seven to nine days. Our 2 other initial treatment failures in the mother have both occurred with the use of 2.4 million units total dosage, 1 of the women with symptomatic early, the other with latent syphilis. In general, nonetheless, we have felt that, since inadequate dosage may be serious for the infant, it is better to err on the side of giving too much rather than too little penicillin.

Specifically, if there were no complications we would use a total dosage of 2.4 million Oxford units of sodium penicillin given over a period of eight to nine days as follows: 10,000 units in each three hour injection intramuscularly for eight injections and 20,000 units in each three hour injection for the next eight injections, followed by fifty-four three hourly injections of 40,000 units each. Complications arising from therapy, from pregnancy or from syphilis require strict individualization. Since our results have been satisfactory without the supplementary use of other types of chemotherapy for syphilis, we can see no reason at this time for employing any drug but penicillin provided the initial response is satisfactory.

CONCLUSIONS

The following conclusions are based on a study still in progress and are subject to modification as additional information is accumulated. They do, however, represent our present working knowledge of the treatment of the pregnant woman with early syphilis with sodium penicillin by intramuscular injection and as such are of value as an interim report.

1. One syphilitic infant has occurred among 37 syphilitic pregnancies, treated with penicillin, which have reached term. In 27 of these cases the infant has been followed for periods greater than two months postnatally and the presumptive evidence that the infant is normal is good. This represents a degree of success equal to if not greater than that obtained with the arsenical-bismuth regimens at present widely employed.

2. Either 1.2 million or 2.4 million Oxford units total dosage seem satisfactory for the pregnant woman, though the larger dosage is preferred. It is recommended that the dosage be reduced to one fourth during the first twenty-four hours and to one half during the second twenty-four hours to reduce the possibility of threatened abortion from therapeutic shock and that the duration of treatment be prolonged to eight or nine days.

3. The serologic response to penicillin treatment of the pregnant woman is apparently considerably slower than the average for early acquired syphilis in the adult. It is not necessary, on the other hand, that the mother be seronegative at the time of confinement in order for the infant to be normal.

4. As a result of our continued use of penicillin in the treatment of the pregnant woman with early syphilis, we are confident that this drug represents a distinct advantage in that it is a convenient, safe and effective mode of therapy.

PENICILLIN IN PREVENTION OF PRENATAL SYPHILIS

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Ingraham and his associates [1] have recently published a communication dealing with penicillin treatment of the syphilitic pregnant woman. Their report deals with 49 pregnant women, of whom, at the time of treatment, 26 had manifest early (primary or secondary), 19 early latent (no symptoms; infection of less than four years' duration), 3 late latent (more than four years' duration) and 1 congenital syphilis. At the time of their writing, 39 of these women had delivered a total of 40 infants (one of them 2 pregnancies).[2]

The spectacularly favorable results in the prevention of syphilis in the fetus reported by Ingraham's group is confirmed by our own material. We have treated 31 mothers, all of whom had early infectious (primary or secondary) syphilis at the time of treatment, all of whom have now delivered and all infants are apparently normal. Our own material will be compared with that of Ingraham and his group in a series of tables, with accompanying comment.

TYPE OF SYPHILIS IN THE MOTHER

The published material of the Philadelphia group is not entirely comparable with that in Baltimore. Of their 49 patients only 26 had lesions of early syphilis. The Baltimore group has up to this point deliberately avoided the penicillin treatment of pregnant women with latent syphilis, confining itself entirely to manifest early (primary or secondary) syphilis in the mother. This limitation of the clinical material for the purposes of evaluation of penicillin was undertaken because of (*a*) the practical certainty of infection of a fetus born of a mother with outspoken early syphilis and (*b*) the lack of such certainty in infants born of mothers with latent syphilis. Though the exact percentage probabilities have never been accurately defined, it is a well known fact that mothers with latent syphilis may deliver normal nonsyphilitic children, the risk of syphilis to the child being roughly in inverse proportion to the duration of syphilis in the mother (Kassowitz's law).[3] We therefore proceeded to test the efficacy of penicillin in the prevention of infantile congenital syphilis in that group of cases in which the probability of infection of the fetus was largest.

Through Ingraham's [4] courtesy we are enabled to present the Philadelphia mothers with early syphilis (status as of Sept. 10, 1945) in exact parallel with our own cases, thus adding to the value of the total series by doubling the numbers and eliminating confusion from the inclusion of latent syphilis in the published Philadelphia material.

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1. Ingraham, N. R.; Stokes, J. H.; Beerman, H.; Lentz, J. W., and Wammock, V. S.: Penicillin Treatment of the Syphilitic Pregnant Woman: A Progress Report, J. A. M. A., in press.

2. These data are taken from a carbon copy of their manuscript, which we have been permitted to see prior to its publication. Certain minor alterations may have been made by the Philadelphia authors in galley proof.

3. To be discussed later.

4. Ingraham, N. R.: Personal communications.

PREVIOUS TREATMENT GIVEN TO THE MOTHER

None of the Philadelphia patients with early syphilis and 2 of the 31 Baltimore patients had received previous antisyphilitic treatment (table 1). One of these was a Negro woman aged 19 who had primary syphilis in November 1943. Between November 1943 and April 1944 she had received thirty intravenous injections of oxophenarsine hydrochloride (mapharsen) totaling 1,800 mg. and eight intramuscular injections of metallic bismuth totaling 1.04 Gm. Her blood serologic test remained negative from May 1944 to July 1944. During July 1944 her sexual partner had an infectious relapse of secondary syphilis, and the patient's serologic test again became positive with a quantitative titer of 16 units, and dark field positive genital lesions occurred. It was felt that she had either a reinfection or a relapse, probably the former. She was retreated with 1.2 million units of penicillin in August 1944 in the fourth month of pregnancy.

The second patient was a Negro woman aged 19 who at 4 months of age was observed in the Johns Hopkins Hospital to have a positive serologic test for syphilis and outspoken signs of congenital syphilis, including snuffles and a generalized skin eruption. She received irregular treatment over a period of eight years, totaling ten doses of sulfarsphenamine, seven doses of neoarsphenamine and eight doses of bismuth. Her spinal fluid examination was negative at the age of 17 years, and her blood serologic tests were repeatedly negative during eighteen years after the initial diagnosis of congenital syphilis was made. She apparently had a reinfection [5] when she was found in February 1944 to have secondary syphilis with dark field positive mucosal lesions and a quantitative blood serologic titer of 256 units. Not pregnant at this time, she was given 800,000 units of penicillin (in eight doses of 100,000 units each at twelve hourly intervals) for secondary syphilis. Her blood serologic titer declined to 1 unit six months after completion of this treatment; but one month later it relapsed to 64 units. At this time (October 1944) she was one month pregnant and was retreated with 3.6 million units of penicillin.

THE DOSAGE OF PENICILLIN

In the Philadelphia series 24 mothers received a single course of penicillin only; 2 received multiple courses during pregnancy. In the Baltimore series the corresponding figures are twenty-eight single courses and three multiple courses. The total dosage range of the single courses in both Baltimore and Philadelphia groups is comparable, the majority of patients having received from 1.2 to 2.4 million units. In the Baltimore group 3 patients were given only 600,000 units and 4 others a total of 3.6 million units.

In the Philadelphia series 2 patients were retreated during pregnancy. Each of these received 2.4 million units of penicillin as a first course in the fourth and fifth months of pregnancy respectively. One was retreated with a second course of 4.8 million units in the ninth month of pregnancy, four months after the first course; the other received a second course of 2.4 million units in the seventh month of pregnancy, three months after the first course. In each case retreatment was given because of failure of immediate serologic response. In each case the infant was born alive and apparently normal.

All of the 3 Baltimore patients to whom retreatment during pregnancy was given had serologic relapses following an initial course of penicillin. One of the 3 was initially treated with 600,000 units, 1 with 800,000 units and 1 with 2,400,000 units of penicillin. All 3 were in the last trimester of pregnancy when they developed serologic relapse.

These relapses in the Baltimore group occurred in the 3 patients who received second courses of penicillin as described in the previous paragraph.

TABLE 1.—*Status of Syphilitic Mothers and Treatment Given to Them During Pregnancy*

(As of Sept. 10, 1945)

Author	Total Mothers Treated	Primary Syphilis	Secondary Syphilis	Previous Treatment Given (As + Bi)	Total Dosage of Penicillin, Million Units: Single Course Only 0.6	1.2	2.4	3.6	Multiple Courses 1.8	3.9	4.4	4.8	7.2	Duration of Penicillin Treatment	Duration of Pregnancy at Time of Penicillin Treatment, Weeks: <16	16-32	>32
Ingraham and others	26	2	24	0	..	10	14	..	..	..	..	1	1	4-11 days	1	18	7
Goodwin and Moore	31	5	26	2*	3	14	7	4	1	1	1	..	..	4-15 days	13	13	5
Total	57	7	50	2	3	24	21	4	1	1	1	1	1		14	31	12

* See text.

The first patient had an initial course of penicillin of 2,400,000 units (20,000 units every three hours for 120 doses). She had dark field positive lesions of secondary syphilis diagnosed in the fourth month of pregnancy. She was seronegative four and five months after the first course of penicillin and then at six months after treatment (and in the last month of pregnancy) developed a serologic relapse to 16 units. She was then retreated with 1,560,000 units of penicillin. On completion of this amount of penicillin the patient, being at full term, delivered spontaneously. Penicillin was continued after delivery to a total of 4,640,000 units in this second course.

The second patient received 800,000 units in the initial course of penicillin for primary syphilis with dark field positive lesions at a time when she was about two weeks pregnant. She was serologically negative four months after penicillin treatment and developed serologic relapse seven months after treatment (with a titer of 2 units). She was retreated with 3,600,000 units of penicillin in the seventh month of pregnancy.

The third, and last, of the Baltimore group received 600,000 units in the second month of pregnancy for secondary syphilis with dark field positive lesions. Her serologic titer declined to 2 units two months after treatment and then rose in the third and fourth month to 16 units. She was considered to have a serologic relapse and was retreated with 1,200,000 units in the sixth month of pregnancy.

5. This is an additional example of reinfection in treated congenital syphilis not previously reported from this clinic in the two papers by Hahn (Am. J. Syph., Gonor. & Ven. Dis. **25**: 200, 1941) and Allison (ibid. **26**: 212, 1942).

DURATION OF PREGNANCY AT THE TIME OF PENICILLIN TREATMENT

As is indicated in table 1 of the combined Philadelphia and Baltimore series 14 mothers were treated before the sixteenth week of pregnancy, to 31 treatment was given between the sixteenth and thirty-second weeks, and in 12 the duration of pregnancy was thirty-two weeks or longer at the time of treatment. As Ingraham and his group point out, "since fetal infection is considered to occur any time after the sixteenth week and to become increasingly more probable as term approaches, the distribution of cases throughout the pregnancy, as indicated, should give a fair appraisal of the worth of penicillin in any stage [of pregnancy]."

ABORTION DURING TREATMENT (THERAPEUTIC SHOCK? DIRECT PENICILLIN ACTION?)

While Ingraham and his associates observed two actual and two threatened abortions among their 49 women treated, three of these accidents occurred in patients with latent syphilis. A similar accident was not observed in any of the 31 Baltimore cases, all with early syphilis (table 2). The Philadelphia authors

TABLE 2.—*Outcome of Penicillin Treatment in Mothers*

(As of Sept. 10, 1945)

Authors	Abortions		Relapses in Mothers		No. of Mothers Followed Serologically for 6+ Mos. After Penicillin Treatment	Of These, Mother's Blood †	
	Actual	Threatened	Clinical	Serologic		Seronegative	Still Positive
Ingraham and others	0	1	2*	0	22	12	10
Goodwin and Moore	0	0	0	3‡	24	20	4
Total	0	1	2	3	46	32	14

* After 1.2 and 2.4 million units, respectively.
† For discussion, see text.
‡ Two after 800,000 and one after 2.4 million units.

have interpreted this phenomenon as possibly due to therapeutic shock (Jarisch-Herxheimer reaction) and are inclined to advise a reduction of initial penicillin dosage for the first forty-eight hours of treatment of pregnant women. The fact that 3 of their 4 actual and threatened abortions were in patients with latent syphilis, coupled with the total absence of phenomenon in 25 of their 26 and in our own 30 patients with early syphilis, tends, we believe, to weaken this argument. Therapeutic shock from penicillin is considerably more frequent and more intense in males and nonpregnant females with early than in those with late syphilis. If this reaction were a factor in actual or threatened abortion, one would naturally expect its incidence to be high in early syphilis of the mother (1 example in 57 cases of the combined series) and low in latent infections of longer duration (though actually 3 examples in 23 such women in the published Philadelphia paper). We are therefore not inclined to share the opinions either that abortion, actual or threatened, is a frequent evidence of therapeutic shock in penicillin treated mothers or that great initial caution in treatment is necessary or desirable to prevent this treatment reaction.[5a]

Leavitt,[6] who has observed 2 actual and 6 threatened abortions among 21 pregnant syphilitic women (type of syphilis in the mother not stated), suggests an alternative explanation for the phenomenon. Seven of his 8 reacting patients were treated with the same lot of penicillin. This fact and "the oxytocic action of ergot, a biologic product of another mold (Claviceps purpurea)" suggest to him that penicillin or some impurity contained in commercial penicillin may exert a directly stimulating effect on the contractility of the uterine musculature.

If one combines the total of 101 women treated by Ingraham and his group, Leavitt and ourselves, there were 4 actual and 7 threatened abortions. These figures are not statistically impressive as incriminating penicillin as a cause of abortion since it is a well known fact that in obstetrics that approximately 10 per cent of all pregnancies in normal nonsyphilitic, nonpenicillin treated women end in spontaneous abortion (usually early in pregnancy) and perhaps another 5 to 10 per cent have threatened abortions.[7] The abortions, actual and threatened, among these penicillin treated syphilitic women do not equal the normally expected incidence of spontaneous abortions.

The solution of the problem as to the effect of penicillin in producing abortion is readily obtainable from simple pharmacologic and clinical studies now in progress. Pending information to be gained from these studies, we feel that the suggestion that penicillin has abortifacient effects is unwarranted by the facts.

CLINICAL AND SEROLOGIC RELAPSES IN THE MOTHER

In the Philadelphia group (table 2) one Negro woman with secondary syphilis who received 1.2 million units of penicillin during the fifth month of pregnancy was found to have a clinical relapse at the time of delivery. Since the infant born of this mother was the only one in the entire series who has so far developed congenital syphilis, it is important to note that in the interval between treatment and delivery the titer of the mother's blood serologic test did not decline. This fact suggests that, in early syphilis of the mother at least (as contrasted to latent infections), failure of maternal serologic response to penicillin treatment administered early in pregnancy is an indication for retreatment of the mother before delivery. It is possible that even this single failure of treatment in the infant might have been prevented by retreatment of the mother.

A second Philadelphia Negro woman with secondary syphilis, treated with 2.4 million units during the seventh month of pregnancy, developed infectious clinical relapse four weeks after the delivery at term of a normal infant.

The 3 Baltimore maternal relapses, all serologic only, without clinical evidence of infectious relapse, have been described in the paragraph dealing with retreatment of the mother. With regard to the question of retreatment, it is, we think, significant that the infants born of these 3 relapsing and retreated mothers, and of the 2 retreated Philadelphia mothers, were all normal.

SEROLOGIC PROGRESS OF THE MOTHERS

As indicated in table 2, only 12 of the 22 Philadelphia patients followed for six months or longer after treatment have become seronegative, whereas 20 of the 24 Baltimore patients followed for comparable periods of time have reverted to seronegativity.

5a. Since this paper was submitted for publication, Speiser and Thomas (J. Ven. Dis. Inform. **27**: 20 [Jan.] 1946) have likewise noted the absence of abortifacient effect of penicillin in 149 pregnant women with early syphilis treated by them.

6. Leavitt, H. M.: Clinical Action of Penicillin on the Uterus, Ven. Dis. Inform. **26**: 150 (July) 1945.
7. Eastman, N. J.: Personal communication.

In their published paper the Philadelphia workers have suggested, on the basis of their results in early and latent syphilis combined together, "that the pregnant syphilitic women with *early*[8] syphilis, treated with penicillin, may be expected to remain seropositive even though the treatment is apparently effective, for as long as six months to one year. . . . The serologic response here noted is considerably slower than that recorded . . . for early syphilis as a whole." This conclusion seems unjustified, because of lack of separation of their published material as between early and latent syphilis. It is already known that the serologic response to penicillin of patients with long-standing syphilitic infection (i. e. of two years' duration or longer) is considerably less prompt and less in proportion of numbers than in manifest early infectious (primary or secondary) syphilis.

In our material, which consists entirely of patients with early syphilis, we have seen nothing to suggest that pregnancy exerts any effect in slowing up serologic response, since our pregnant patients have reverted toward negative at the same rate as nonpregnant females or males.

Thirty-three infants are therefore represented. All of these were born alive and apparently normal at birth. Not one of the infants has developed any clinical, serologic or roentgenographic evidence of congenital syphilis.

Of the combined 60 infants in the Philadelphia and Baltimore series (excluding the 1 Philadelphia infant who developed congenital syphilis) 11 have been followed for less than two months, 29 for from two to six months, 13 for from six to twelve months and 7 for more than twelve months. The Baltimore infants have been followed in the same manner as those of the Philadelphia series, with frequently repeated quantitatively titered blood serologic tests, roentgenograms of the long bones (see footnote 4 in table 3) and physical examinations.

We would modify the probable outcome in the infants of penicillin treated syphilitic mothers from the published opinion expressed by Ingraham and his group, as follows: We believe that in all of the infants followed for six months or more the diagnosis normal (or nonsyphilitic) is definitely established. In infants followed for from two to six months it is highly improbable that the diagnosis must be later modified. We agree, of course, that no final decision is possible in infants followed less than two months.

TABLE 3.—*Status of Infants Born of Penicillin Treated Mothers*
(As of Sept. 10, 1945)

Author	Number of Mothers So Far Delivered	Number of Infants	Infants Born Alive Apparently Normal at Birth	Infants Developing Syphilis	Infants Seropositive at Birth, Reverting Spontaneously to Negative During Specified Month of Life			Duration of Follow-Up of Infants Apparently Normal at Birth, Months				Follow-Up of Infants Apparently Normal at Birth			Death of Infants Apparently Normal at Birth
					1st	2d	3d	2	2-6	6-12	12+	P. E.	X-Ray	Serologic	
Ingraham and others	26	27[1]	27	1[2]	7	2	..	3	11	6	7	26 normal	26 normal	26 normal	1 at 7 mo. of age from acute febrile illness, undetermined cause, autopsy negative for syphilis
Goodwin and Moore	31	33[3]	33	0	8	..	1	8	18	7	..	33 normal	All[4] normal	33 normal	1 at 19 weeks, acute nutritional disturbance and sickle cell anemia; STS negative at time; no autopsy
Total.....	57	60	60	1	15	2	1	11	29	13	7	59 normal	All[4] normal	59 normal	2

1. One mother had two pregnancies during the second of which no treatment was given.
2. Mother given 1.2 million units for secondary syphilis at 5th month of pregnancy; clinical relapse in mother at 9th month of pregnancy; infant infected.
3. Two mothers had two pregnancies during the second of which no treatment was given.
4. Roentgenograms done routinely in Baltimore (see text) on only 17 of 33 infants because of shortage of x-ray film, but all of them normal.

OUTCOME OF PENICILLIN TREATMENT IN THE PREVENTION OF CONGENITAL SYPHILIS

In this respect we are able to confirm completely the spectacular results reported by the Philadelphia group (table 3). Of the 26 Philadelphia mothers with early syphilis (included herewith through Ingraham's courtesy), all had delivered as of Sept. 10, 1945. One of these 26 women has had two pregnancies, during the first of which penicillin was given, and during the second no treatment of any kind. All of the 27 infants born of these 26 mothers were alive and apparently normal at birth. One of them, born of the mother who was found to have infectious relapse at the time of delivery, developed clinical, serologic and x-ray evidence of syphilis, beginning some seven weeks after birth. The other 26 infants are still normal.

All of the 31 mothers in our own series have now been delivered. Two of them have been pregnant twice, penicillin being administered in each case during the first pregnancy, and no treatment during the second. In this connection attention is particularly directed to the fact that in the combined Philadelphia and Baltimore series 19 infants apparently normal at birth had at the time or within the first week of life positive blood serologic tests in cord or venous blood. In all of these infants the mothers were seropositive at the time of delivery. One, the Philadelphia child just referred to, has developed congenital syphilis. The other 18 (table 3) have all become spontaneously seronegative. In 15 of these 18 permanent seronegativity was achieved within the first month of life, in 2 within the second month and in 1 within the third month (on the seventy-third day). These data support the opinion that following penicillin treatment of the infected syphilitic mother a three months observation period of the child, with sustained seronegativity and absence of clinical or roentgenologic evidence of syphilis, represents at least 95 per cent certainty that the child has not been infected.

8. Italics ours.

DEATH OF INFANTS APPARENTLY NORMAL AT BIRTH

Of the 60 children born alive in the combined Baltimore and Philadelphia series, 2 have subsequently died at nineteen weeks and seven months respectively. Neither of these deaths could be attributed to syphilis.

COMMENT

Comparison of Penicillin Results in the Prevention of Prenatal Syphilis with Those Obtainable from Metal Chemotherapy.—In most, if not all, of the older literature dealing with the prevention of prenatal syphilis by treatment of the mother with "standard" prolonged arsenic-bismuth-mercury, there is a curious hiatus. Most of the reporters of large series of cases (including the several publications of the University of Pennsylvania group, mostly by Ingraham, and including also the extensive study of McKelvey and Turner [9] from our own clinic) have fallen into the error of disregarding the stage of clinical manifestations and the duration of infection in the mother. Results have been based on a specified number of mothers "with syphilis" without regard to the varying prognosis as to the child in the absence of maternal treatment, depending on these important factors.

To our knowledge Paley [10] is the only reporter of a large series of cases who may be excepted from these statements. This worker studied the outcome of pregnancy in 617 syphilitic women whom he subdivided into three groups on the basis of duration of infection in the mother, i. e. less than two years, two to five years, more than five years. He too omits any consideration of clinical manifestations in the mothers, and he does not provide information as to how he dated the infection in them. To determine accurately the duration of syphilitic infection in pregnant women is usually an impossible task, since most of them have no history of early lesions. It can be done only roughly and on the basis of the collateral evidence of age of the mother, the duration of her sexual activity and, in some cases, on data obtained from the father. Nevertheless, it is entirely probable that in Paley's group of women "infected less than two years" are included all those in his series with manifest lesions of early syphilis. Paley classifies the outcome in the infant in two groups, normal and "syphilitic tragedies." In the latter category he includes abortion, stillbirth and living children with syphilis. Subject to the comments made and to the accuracy of diagnosis of infantile congenital syphilis in 1937 (the date of his report), his data, summarized in table 4, indicated clearly the extreme hazard to the infant posed by recently acquired syphilis in the mother.

TABLE 4.—*Outcome of Pregnancy in Syphilitic Women Arranged by Duration of Infection in the Mother*

(Modified from Paley [10])

Amount of Treatment Given Mother During Pregnancy, Doses of Neoarsphenamine	Duration of Mother's Infection *					
	Less Than 2 Years †		2-5 Years		More Than 5 Years	
	Number of Mothers	"Syphilitic Tragedies" in Infants, %				
4 ‡	47	70.6	58	36.2	109	38.5
4-7	49	48.9	57	21.0	104	10.5
8+	42	23.8	56	18.9	93	6.4

* See text of the present paper regarding accuracy of these time intervals.

† This group of women, infected less than two years, presumably contains both those with manifest lesions of early syphilis and others with asymptomatic latent syphilis.

‡ This treatment group, of "less than four doses of neoarsphenamine," presumably includes some patients (number not stated) who received no treatment during pregnancy.

In order to document further the point that the outlook for the infant is worse if the mother has manifest early syphilis during pregnancy than in the later years of maternal infection, it is fortunate that the original work sheets of McKelvey and Turner [9] are still available. We have examined these records and have recalculated the infantile results on the basis in question. In the original series of McKelvey and Turner there were 650 syphilitic mothers to whom antisyphilitic treatment was administered for the first time during pregnancy. Seventy-one of these women had demonstrable early (primary or secondary) syphilis at the time; the remaining 579 were in later stages of the disease (usually latent). Included among these 579 are an undeterminable number with symptomless early infections; but this fact only lends greater significance to observable differences in the outcome in the infants of the two maternal groups.

During the period of the McKelvey-Turner study arsenical treatment administered to the mother was almost exclusively arsphenamine at weekly intervals in an average single dose of 0.3 Gm. The amount of treatment given may therefore be conveniently expressed in grams of this drug (i. e. 1 Gm. equals approximately three injections, 4 to 6 Gm. equals twelve to twenty injections, and so on). When more than 2 Gm. (six injections) of arsphenamine was given, a compound of heavy metal (mercury or bismuth) was usually employed as well. The total amount of arsphenamine given is a rough index to the duration of pregnancy at the start of treatment; i. e., the earlier treatment was begun, the more treatment the mother received before delivery, and vice versa. The same considerations as to treatment also apply to Paley's material.

TABLE 5.—*Probability of Syphilitic vs. Normal Infants After Varying Amounts of Treatment in Mothers with Early and Late (Usually Latent) Syphilis*

(Recalculated from Turner and McKelvey [9])

Treatment (in Terms of Gm. of Arsphenamine)	Early Syphilis in Mother (71 Cases)		Late (Usually Latent) Syphilis in Mother (579 Cases)	
	Infant Almost Certainly Normal, %	Infant Almost Certainly Syphilitic, %	Infant Almost Certainly Normal, %	Infant Almost Certainly Syphilitic, %
None	5	95	35	65
<2 Gm.	50	50	75	25
2-3 Gm.	70	30	90	10
3+ Gm.	95	5	98	2

Having these points in mind, the data of McKelvey and Turner have been recalculated and the results shown in percentage terms in table 5. The terms "almost certainly" normal or "syphilitic" respectively, as applied to the infant, have been purposely utilized because in some infants the evidence was presumptive rather than absolute and because the criteria of diagnosis of infantile congenital syphilis have undergone considerable modification since the publication of that paper (and of Paley's also). Nevertheless the figures presented are believed to be substantially accurate. No matter what amount of treatment was given to the mother, the results in the infant were substantially worse when the mother had early syphilis during pregnancy than when she had late or latent syphilis. In untreated early syphilis of the mother there was practically no chance of a normal infant unless the maternal

9. McKelvey, J. H., and Turner, T. B.: Syphilis and Pregnancy: Analysis of Outcome of Treatment in Relation to Treatment in 943 Cases, J. A. M. A. **102**: 503 (Feb. 17) 1934.

10. Paley, S. S.: Syphilis in Pregnancy, N. Y. State J. Med. **37**: 585 (March 15) 1937.

infection had occurred within the last few days or weeks of pregnancy. In maternal latent syphilis (usually of several years' duration), on the other hand, 35 per cent of babies were normal and nonsyphilitic even in the absence of maternal treatment. These data are confirmatory of those of Paley but even more striking.

These facts are justification for a judgment of penicillin based on its effects in early maternal infections.

It is also notable that with the older system of administering metal chemotherapy to the mother at weekly intervals (even with oxophenarsine hydrochloride twice or three times weekly, we think) during the available time (i. e., between the dates of diagnosis and delivery), the best results in the fetus are not obtained unless treatment is started early in pregnancy, before the fifth month, and continued throughout its course.

About 150 pregnant women with early syphilis have been reported in the literature as treated with intensive arsenotherapy (usually about 1,200 mg. of oxophenarsine hydrochloride by intravenous drip or multiple syringe injection in five to ten days). The majority of these are contained in the papers by Sadusk and Shaffer,[11] Rattner,[12] Speiser and his associates[13] and Neilson and his group.[14] It is impossible to determine accurately from the published statements the outcome in the infants of these women, but the best possible approximation is furnished in table 6, where it is indicated that about 15 per cent of the babies had syphilis in spite of this treatment.

TABLE 6.—*Probability of Syphilitic vs. Normal Infants After Intensive Arsenotherapy of Early Syphilis in the Mother During Pregnancy*

Cases Treated	Infants	
	Syphilis (%)	Normal (%)
150 (approximately)	15	85

Tables 4, 5 and 6 should be read in comparison with the penicillin results presented in table 3. Penicillin is incomparably superior to metal chemotherapy, no matter how administered, in the prevention of prenatal syphilis. After penicillin treatment of 57 mothers with early syphilis there were no dead infants and only 1 living infant with congenital syphilis among 60 infants born, a failure rate of 1.6 per cent; and this one failure might have been prevented by appropriate penicillin retreatment of the mother. With penicillin the results are equally good no matter what the duration of pregnancy at the time of treatment. This contrasts with a failure rate of 5 to 50 or more per cent from metal chemotherapy, depending on the time in pregnancy of institution of such treatment and the amount administered.

The Results of Penicillin Treatment of Mothers with Latent (or Late) Syphilis.—Ingraham and his associates include in their paper the outcome of treatment of 23 patients with latent (19 early—less than four years' duration; 3 late—more than four years' duration) and 1 with congenital syphilis. Among these women were two abortions, one at the fourth, the other at the seventh month of pregnancy. There is no statement provided in the paper as to necropsy findings in either fetus.[15] The 21 children were born alive and all were apparently normal with no examples of congenital syphilis. In view of the data presented in tables 4 and 5 this is also an excellent result, though hardly as impressive as in early maternal syphilis.

11. Sadusk, J. F., Jr., and Shaffer, F. E.: Observations on Massive Dose Arsenotherapy of Early Syphilis by Intravenous Drip Method: Pregnancy and Its Outcome Associated with or Following Treatment of Early Syphilis by Massive Arsenotherapy, Yale J. Biol. & Med. **14**: 365 (March) 1942.

12. Rattner, H.: The Treatment of Syphilis in Pregnancy by the Five Day Massive Dose Method, Am. J. Obst. & Gynec. **46**: 255 (Aug.) 1943.

13. Speiser, M. D.; Wexler, G.; Thomas, E. W., and Asher, H. A.: The Treatment of Early Syphilis During Pregnancy, Am. J. Obst. & Gynec. **49**: 214 (Feb.) 1945.

14. Neilson, A. W.; Blaney, L. G.; Stephens, L. J., and Maxwell, R. W.: Intensive Chemotherapy of Early Syphilis, Am. J. Syph., Gonor. & Ven. Dis. **28**: 553 (Sept.) 1944.

RECOMMENDATIONS

The data so far presented should be considered in conjunction with the known dangers of arsenic and bismuth therapy, the known nearly complete lack of toxicity of penicillin for the mother and the compression of penicillin treatment within a minimum time period of a few days.

In view of these facts, we are prepared to recommend that, for the purpose of prevention of prenatal syphilis, metal chemotherapy for the syphilitic mother whether with early or late (including latent) syphilis be abandoned and that penicillin be adopted universally in its stead.

Since therapy for the fetus should be planned in conjunction with that for the mother herself, and since definitive information as to the optimum method of use of penicillin in early or late acquired syphilis of adults is not yet available, it is possible to recommend treatment plans at present only as preliminary information permits. Certain minimum requirements should be met:

1. The total dose of penicillin should be not less than 2.4 million units administered intramuscularly in aqueous or saline solution at intervals of not less than two nor more than three hours night and day.

2. The total duration of treatment should be not less than seven and one-half days.

3. For the present, and until definitive information is available from research centers, absorption-delaying methods of use of penicillin (i. e. as in peanut oil-beeswax) should not be used.

4. Following completion of penicillin treatment, the mother must be followed clinically and with quantitatively titered serologic tests at least as often as once a month until delivery (and preferably for the first year after treatment) and at appropriate intervals thereafter.

5. Retreatment with penicillin should be given during pregnancy to the mother if (*a*) there is evidence of clinical or serologic relapse or (*b*) the original maternal serologic titer does not significantly decline within three months after treatment.

6. The infant must be followed after birth for a minimum period of three months by means of (*a*) frequently repeated physical inspections, (*b*) quantitatively titered blood serologic tests, preferably every two weeks, and (*c*) roentgenograms of the long bones taken preferably at the first and sixth weeks of life.

7. There is no satisfactory evidence that abortion, actual or threatened, is more frequent during penicillin treatment of the mother than during other forms of antisyphilitic treatment, or indeed more frequent than the expected incidence of spontaneous abortion in normal women. Unless and until such evidence is forthcoming, speculation is useless as to whether the phenomenon is due to therapeutic shock or to the direct oxytocic action of penicillin.

15. The autopsy of the child stillborn at the seventh month showed no definite evidence of syphilis. Grossly, syphilitic epiphysitis appeared probably to be present in the long bones, but this could not be confirmed histologically because of autolysis. There are no available pathologic data on the fetus aborted at the fourth month (Ingraham [9]).

On the basis of the data presented in this paper, we see no reason for unusual caution in initiating the penicillin treatment of syphilitic pregnant women.

8. It is not yet determined whether a woman with early syphilis, treated with penicillin while nonpregnant or during an earlier pregnancy, may be permitted to go through a subsequent pregnancy without treatment. Although 3 women in the present series have delivered normal children in a second pregnancy in which no treatment was given, further experience must accumulate before the point can be decided. Pending further information, a pregnant syphilitic woman previously treated with penicillin, and whether or not this earlier treatment was apparently successful as to the mother's infection, should be retreated with penicillin in each succeeding pregnancy.

SUMMARY

1. Fifty-seven pregnant women with early syphilis have been treated with penicillin in two university clinics. Sixty infants have been born to these women, all of whom were born alive; only 1 has developed clinical or laboratory evidence of congenital syphilis. In this 1 case, syphilis in the child might possibly have been prevented. The remaining 59 infants are all apparently normal, and 42 of these have been followed for a long enough time after birth to make practically certain of the diagnosis of "no syphilis."

2. These results in the prevention of prenatal syphilis are superior to any heretofore attainable with any method of treatment.

3. There is no satisfactory evidence that penicillin is directly or indirectly responsible for abortion.

4. It is recommended that in syphilitic pregnant women penicillin be used routinely for the prevention of prenatal syphilis, other methods of treatment being abandoned.

PENICILLIN TREATMENT OF THE SYPHILITIC INFANT

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This paper is a supplement to our observations on this same subject recorded about a year ago.[1] Our increasing experience still leads us to feel that sodium penicillin given by intramuscular injection is a satisfactory treatment for infantile congenital syphilis. Considerable progress has been made toward arriving at a satisfactory regimen for the infant infected with syphilis. There is no denying the fact, however, that this problem has seemed considerably more complex to work out than has been the treatment of early syphilis in the adult, with penicillin, largely because of the relative severity of the disease frequently encountered in the newborn in contradistinction to that found in the adult and because of the theoretical dangers inherent in the injudicious use of a rapidly spirillicidal drug under such circumstances. Even though this study is still in progress and much is yet to be learned in the application of penicillin treatment to the syphilitic infant, yet, as the material is accumulating, a conservative appraisal of our existing knowledge seems worth while.

MATERIAL

Thus far we have treated with penicillin 26 infants with early congenital syphilis. The average age of these infants at the time of commencement of therapy has been 3.6 months. Fourteen of the babies have been less than 3 months of age, 7 between 3 and 6 months, 2 between 6 months and 1 year and 3 more than 1 year. Twenty-three of the infants were Negroes, 3 were white, 11 were boys and 15 were girls.[2] None of them had previous treatment for syphilis. All of the infants had clinical evidence of their disease; in many instances dark field examination of surface lesions revealed Treponema pallidum; in almost every case roentgenographic evidence of osteochondritis and periostitis was demonstrable. Latent (symptomless) syphilis in infants was excluded from the study in order better to measure the response to treament by a variety of methods.

At the time of compilation of this material, 21 of the 26 infants are still living. These 21 infants have been followed for an average of 7.6 months after being given penicillin, maximum fifteen months. Four of the infants have been followed for more than one year, 10 for periods of six months to one year and 7 for periods of less than six months after penicillin.

TYPE OF TREATMENT GIVEN AND RESULTS OF THERAPY

It was the purpose of this study to determine what penicillin as such would accomplish in the cure of this disease rather than to find the ideal dosage. The latter will have to be worked out in larger series of cases observed over longer periods. At first we used the approximate equivalent dosage of 2.4 million units for a 150 pound (68 Kg.) adult or 16,000 units total dosage per pound of body weight. Later this dosage was considerably increased, so that of the total number of infants 11 received dosages of sodium penicillin roughly in amount of 16,000 units per pound of body weight; 3 received dosages significantly lower than this; 9 received single courses of therapy with dosages significantly greater than this, and 3 were retreated because of failure of clinical response.

Of the infants who reacted favorably to treatment the initial clinical response has been uniformly good. Symptoms and signs have improved or disappeared; roentgenographic findings, initially abnormal, have gradually regressed over periods of three to six months. The response of the blood serologic test in the group as a whole may be briefly summarized as follows:

Eleven of the 21 living infants have become seronegative in the period of observation. In 3 additional cases the blood serologic titer has regressed from relatively high values to less than 1 unit of syphilis reagin. In those cases which have responded the initial sustained fall in titer was noted on an average eighty-eight days after penicillin (17 cases). The average length of time to obtain sustained seronegativity (11 cases) was one hundred and sixty-eight days after penicillin, with a maximum of two hundred and fifty-seven days and a minimum of seventy-eight days before the first negative test was noted. This serologic response is roughly comparable to that described for the syphilitic

Paper in a symposium on "The Penicillin Therapy of Syphilis" published under the auspices of the Section on Dermatology and Syphilology.
From the Institute for the Control of Syphilis and the Department of Pediatrics, University of Pennsylvania School of Medicine. The work described in this paper was done under a contract recommended by the Committee on Medical Research between the Office of Scientific Research and Development and the University of Pennsylvania.

1. Lentz, J. W.; Ingraham, N. R., Jr.; Beerman, H., and Stokes, J. H.: Penicillin in the Prevention and Treatment of Congenital Syphilis, J. A. M. A. **126**: 408 (Oct. 14) 1944.

2. The Philadelphia General Hospital supplied 14 of these infants, the Children's Hospital 7, the Pennsylvania Hospital 2, the Hospital of the University of Pennsylvania 2 and the St. Luke's and Children's Medical Center 1.

pregnant woman by the University of Pennsylvania group in another paper to be published and materially slower than that obtained in adults.[2] There is some definite reason to believe that this slow response, with occasional relapse and failure to respond at all in some instances, is the result of too low total dosage of the drug or of too short a course of penicillin, as the summary in the accompanying table indicates.

One half of the infants treated with dosages comparable to 2.4 million units in the adult were seropositive at the end of six months, but only 1 in 7 cases remained positive when larger dosage was used. It was the conclusion reached in the National Venereal Disease Control Conference in St. Louis in November 1944 that the dosages employed in infantile syphilis up to that time (16,000 to 32,000 Oxford unit total dosage per kilogram of body weight) were too low.[4] Our experience since that time would seem to indicate that very much larger dosage is desirable. The child (285) in the present series who became seronegative in the shortest time (seventy-eight days), a 5 week old Negro boy with symptoms of his infection and 128 units of syphilis reagin according to quantitative titered tests at the commencement of therapy, received a total dosage of 74,000 Oxford units per pound of body weight over a period of fifteen days. This is roughly four times the dosage recommended for trial at the St. Louis conference and the approximate equivalent of 11.1 million units total dose for the 150 pound adult. It will be recalled that infantile congenital syphilis is a much more severe and extensive infection than is encountered in early infection in the adult and that, provided safe systems of administration can be found, the anticipated effective dosage would be much greater in the congenitally infected infant than in acquired syphilis.

Since the cases summarized in table 2 of our previous report [1] we have had three additional deaths, bringing our total to five. None of these deaths could be attributed to penicillin. Two of them and possibly the third could be attributed to intercurrent infection in an infant in a debilitated state as a result of a severe systemic disease (syphilis).

Patient 286 was a 5 pound 10 ounce (2,550 Gm.) 4 week old Negro girl in almost moribund state at the time she was admitted to the hospital. There were 32 units of syphilis reagin in the blood to the quantitative titered Kline test and extensive osteochondritis and periostitis of the syphilitic type shown by the roentgenogram. The infant was given all possible supportive treatment and started on small doses of penicillin intramuscularly. She died after twelve hours, having received five injections of 350 Oxford units each of sodium penicillin. Autopsy revealed the immediate cause of death as an extensive bronchopneumonia. It would seem that in this infant penicillin probably had no part either favorable or unfavorable in the outcome. It will be recalled that congenital syphilis is often a fatal disease in utero and during the first few weeks of life. It is expecting too much for penicillin or any known mode of therapy to be successful in such a case. A trial of the most effective type of treatment is certainly indicated, however.

Patient 299 died of pneumonia three months after the completion of penicillin therapy. In this instance we were unable to obtain an autopsy. This infant with clinically manifest infantile congenital syphilis was a Negro boy 6 weeks old at the time of commencing treatment, Oct. 25, 1944. He received a total dosage of 61,540 Oxford units per pound of body weight in twelve days. His clinical response was good and his blood serologic test, which had been as high as 128 Kline titered units of reagin, dropped to 2 units by Jan. 17, 1945. The initially positive roentgenogram of the long bones showed healing. Infection with pneumonia followed immediately thereafter, and death occurred on January 30. There was nothing to indicate that death resulted either from syphilis or from its treament. There is every possibility, however, that syphilis was indirectly the cause of death, the initial debilitation of the child, from which he had never completely recovered, predisposing to intercurrent infection.

Patient 397 was a 3 month old Negro boy with bronchopneumonia superimposed on a severely debilitated state from congenital syphilis when he was treated with a total dosage of 224,664 Oxford units of sodium penicillin over a period of eleven days commencing Dec. 1, 1944. In spite of this treatment and expert general pediatric care at the Children's Hospital, the course was steadily downhill, and the infant finally died on December 28. Staphylococcus aureus had been cultured from the blood stream at the time of admission. There was an otitis media. Roentgenograms showed extensive syphilitic osteochondritis and periostitis, which was improving at the time of death. Blood serologic tests for syphilis were strongly positive throughout the period of observation. No autopsy was performed. This represents another case in which penicillin was unsuccessful in combating the complications and debilitation accompanying advanced infantile congenital syphilis.

Relationship of Serologic Response to Total Dosage in Infants with Congenital Syphilis Treated with Penicillin and Followed for at Least Six Months After the Completion of Therapy

Total Dosage of Penicillin	Serologic Response in Period of Observation	
	Positive	Negative
1. Less than 20,000 units per pound.....	4 cases	4 cases
2. More than 20,000 units per pound....	1 case	6 cases

Forty per cent of the infants treated with penicillin developed symptoms of severe gastrointestinal disturbance in addition to temperature reaction. This consisted in abdominal distention, loss of appetite, varying degrees of diarrhea and in some instances vomiting. Gastrointestinal disturbances as a result of the toxemia of congenital syphilis are well known.[5] In some of the infants these symptoms were manifest at the time of admission but almost uniformly were much accentuated within forty-eight to seventy-two hours after the commencement of treatment. They had a tendency to regress and to disappear as the treatment was completed.

There has been much discussion since the publication of our last report among the pediatricians and the syphilologists of the university penicillin group concerning the importance and significance of the Herxheimer reaction to penicillin. Recently 7 infants whose physical condition at the commencement of therapy was good have been given full dosage from the start instead of the previously recommended reduced dosage. All of

3. Moore, J. E.; Mahoney, J. F.; Schwartz, W.; Sternberg, T., and Wood, W. B.: The Treatment of Early Syphilis with Penicillin, J. A. M. A. **126:** 67 (Sept. 9) 1944.

4. Platou, R. V.; Hill, A. J.; Ingraham, N. R.; Goodwin, N. S.; Wilkinson, E. C., and Hansen, A. E.: Penicillin in the Treatment of Infantile Congenital Syphilis, J. A. M. A. **127:** 582 (March 10) 1945.

5. Ingraham, N. R., Jr.: The Diagnosis of Infantile Congenital Syphilis During the Period of Doubt, Am. J. Syph. & Neurol. **19:** 547 (Oct.) 1935.

these have done well. The question of careful judgment arises therefore, largely with regard to the infant who is already in a debilitated state when he is brought to medical care. In such instances expert pediatric attention is of paramount importance.[5a]

SUMMARY OF THE PRESENT STATUS OF OUR KNOWLEDGE IN THE TREATMENT OF THE SYPHILITIC INFANT WITH PENICILLIN

The appropriate total dosage and time dose relationship in the treatment of infantile congenital syphilis has still not been determined, but there is little doubt that penicillin exercises a favorable influence in the treatment of early congenital syphilis. It would seem that, in general, the dosages of penicillin used for infantile congenital syphilis have been too low and that they should be greatly increased, possibly considerably in excess of 20,000 Oxford units of sodium penicillin per pound of body weight, total dosage. There is also the impression with the material at present available that the treatment course should be prolonged to ten or fifteen days rather than limited to seven or eight days as in the past. This is in line with the recently published work of McDermott and his co-workers,[6] which indicates that the important factor in the treatment of syphilis with penicillin is not high dosage but prolonged action at low concentration. It is also apparently unnecessary to reduce the initial dosage of penicillin. In greatly debilitated children treatment should be approached with considerable caution and with maximum supportive general pediatric care. With sodium penicillin the drug should be administered intramuscularly every three hours for the duration of the treatment.

Of those infants in the present series which have been followed for periods of longer than six months after treatment with penicillin 10 (71 per cent) have remained clinically normal and are seronegative; 4 are clinically normal but have remained seropositive. This percentage success does not nearly approach that which is being obtained thus far in early acquired syphilis in the adult and serves only further to emphasize the fact that much study is still required. The cases which have remained seropositive or which have relapsed have been retreated with dosages of penicillin in excess of 20,000 Oxford units per pound of body weight. We have not used other modes of chemotherapy for syphilis in conjunction with penicillin.

CONCLUSIONS

Since this study is still in progress, any conclusions which may at present be drawn must be subject to modification as additional information is collected. The following statement, however, does represent our present working knowledge in the field of penicillin treatment of the syphilitic infant:

1. Initial attempts at the treatment of infantile syphilis with penicillin have borrowed their dosage and length of therapy from experience with the disease in the adult and have given a degree of success of about 70 per cent. A higher percentage of favorable results is to be hoped for as better time dose relationships are worked out.

2. Some evidence is presented to indicate that the total dosage of sodium penicillin by intramuscular injection should be greatly increased for infants. It is also suggested that prolongation of treatment up to two weeks is desirable.

3. The range of total dosage employed for infants treated in this series has been from 11,000 Oxford units per pound to 74,000 Oxford units per pound of body weight given over a period of from seven to fifteen days. The larger total doses with the longer periods of treatment have given the better results.

5a. The pediatric aspects of management will be discussed in more detail in a subsequent communication.

6. McDermott, W.; Benoit, M., and Du Bois, R.: Time Dose Relationships of Penicillin Therapy: III. Regimens Used in Early Syphilis, Am. J. Syph., Gonor. & Ven. Dis. **29**: 345 (May) 1945.

TREATMENT OF EARLY SYPHILIS WITH PENICILLIN

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Penicillin, properly administered, will cure the majority of patients with primary and secondary syphilis! We base this statement on personal observation of over 900 patients with early syphilis and on intimate knowledge of results obtained by other investigators.

Even the most skeptical now are willing to admit the effectiveness of the sodium salts of penicillin injected intramuscularly, usually at a three hour interval day and night, over a period of from seven to ten days. Adequate dosage will produce a percentage of cures in cases of early syphilis (primary and secondary) as good and probably better than chemotherapy.

We do not wish to leave the impression that an optimum dosage schedule has been developed. Investigators concerned with this particular subject are still striving toward that goal.

However, it is reasonable to suppose that sometime during the next five years such an optimal schedule of treatment for early syphilis will be found. It may be 5 million units of penicillin in seven and one-half days; it may be a combination of penicillin with arsenic and/or bismuth. It may be delayed absorption penicillin (our immediate problem) suspended in peanut oil-beeswax mixture, or it may be the administration of the penicillin orally. Nevertheless it probably will be penicillin, unless a new antibiotic makes its appearance that is more effective against the spirochete of syphilis than the penicillin of today.

Certainly the curability of syphilis depends on (1) total dosage, (2) injection interval, (3) duration of treatment days and (4) the addition of other antisyphilitic drugs.

A discussion of oral penicillin in the treatment of syphilis is too experimental to deserve consideration in this paper.

Let us therefore look at what is known of the effect of sodium penicillin injected intramuscularly, using a modification (20,000 units of penicillin every three hours for seven and one-half days, total 1.2 million units) of Mahoney's original schedule (25,000 units every four hours for eight days, total 1.2 million units) at one extreme and, at the other extreme, the newer penicillin preparations under investigation at present, namely delayed absorption preparations.

Paper in a symposium on "The Penicillin Therapy of Syphilis" published under the auspices of the Section on Dermatology and Syphilology.
From the Department of Dermatology and Syphilology, Southwestern Medical College, and the Dallas Syphilis and Venereal Disease Clinic, Parkland Hospital.
The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the Southwestern Medical Foundation.

We know now that a total dose of 300,000 units in seven and one-half days is frankly inadequate; likewise, a total dose of 600,000 units. Although probably effective, 1.2 million units still leaves an appreciable number of failures; therefore we feel that one is justified in using 2.4 million units of penicillin as the dosage of choice. This total dosage was adopted by the Army and Navy. (All schedules utilize intramuscular injections every three hours for seven and one-half days.)

We have used injection intervals of three hours, four hours, six hours and twelve hours. All except the three hour interval proved inadequate.

With regard to the time required in the treatment of early syphilis, we believe that, with a given dosage, cutting the time in half from seven and one-half days to a little under four days is inadequate therapy. Little is known about schedules requiring fifteen days instead of seven and one-half days. We predict, however, that a fifteen day schedule probably will not be significantly superior to a seven and one-half day schedule, the individual dose remaining constant. From a practical standpoint it seems illogical to treat patients fifteen days in order to gain a slight advantage. Why not be satisfied with a schedule of treatment that yields approximately 90 per cent "cures," carefully follow these patients through the critical period of relapse and reinfection, namely the first twelve months following treatment, and individualize the treatment of the failure group?

We believe, therefore, that the use of 2.4 million units of penicillin in seven and one-half days (40,000 units intramuscularly every three hours) is definitely justified but question whether doubling either the total dose and/or the total time is advisable.

Are we, in addition, justified in adding a chemotherapeutic agent to a course of penicillin, such as oxophenarsine hydrochloride, bismuth or both? We think the answer is definitely "yes."

Throughout the years most patients with early syphilis have been more successfully treated when more than one drug was utilized. Recent experience has indicated that the addition of oxophenarsine hydrochloride or bismuth salicylate to a course of penicillin probably cures more patients with early syphilis than if that dose of penicillin had been used alone.

Evan Thomas at Bellevue Hospital in New York treated several hundred patients with 1.2 million units of penicillin and, in addition, gave 40 mg. of oxophenarsine hydrochloride intravenously daily for eight consecutive days during the time the penicillin was administered. We have treated several hundred patients with the same penicillin schedule with the addition of five intramuscular injections of bismuth salicylate, giving 0.2 Gm. of bismuth salicylate in oil the first, third, fifth, seventh and ninth days.

These two systems of treatment are comparable but, naturally, are too young to evaluate. However, certain impressions and certain preliminary statistical observations are definite to him and to us. Even in a limited period of observation, namely a little more than a year, the percentage of failures in Thomas's group and in ours is perceptibly less than when patients were treated with penicillin alone, with comparable periods of follow-up observation.

It might be argued that the addition of oxophenarsine hydrochloride in Thomas's series, and bismuth in our series, merely delayed or postponed the appearance of failures in the form of relapse or reinfection. It probably would have no influence on the incidence of reinfection, but we must freely admit that a system of treatment which combines penicillin with arsenic, or penicillin with bismuth, might conceivably delay by a number of months the incidence of relapse lesions in the given patient or in any group of patients. Hypothetically, this should be more true of patients treated with combined penicillin and bismuth than with patients treated with penicillin and arsenic. Preliminary observations, however, are most encouraging. Therefore it would seem wise to add a reasonable amount of oxophenarsine hydrochloride, bismuth salicylate in oil or both to any penicillin regimen for the treatment of early syphilis.

Which, then, should we add to the "standard" Army and Navy treatment schedule of 2.4 million units of penicillin given in a seven and one-half day period, oxophenarsine hydrochloride or bismuth or both?

At present, from a practical standpoint, the answer seems obvious. Add the safest form of chemotherapy, bismuth, and exclude the most dangerous, arsenic.

We shall not consider the experimental work now in progress combining the use of intramuscular penicillin with fever therapy. Even if this combination were provocative of an optimum "cure rate," it could not be recommended for routine mass treatment of early syphilis, for obvious reasons.

The much argued question of what constitutes relapse and what constitutes reinfection has been clearly and concisely summarized in an editorial by Moore in the July 1945 issue of the *American Journal of Syphilis, Gonorrhea and Venereal Diseases.* Since the advent of all rapid methods of treatment of syphilis, beginning with the five day intravenous drip until the present day, syphilologic conservatism has relegated reinfection into the category of relapse in evaluating all newer methods of treatment. The present coordinated study being carried out under the direction of the Penicillin Panel of the Subcommittee on Venereal Diseases of the Committee on Medical Research is no exception. It has been admitted by some (J. E. M.) that reinfection occurs now many times more frequently than formerly and that systems of treatment that are completed in a week or ten days result in reinfection between husband and wife by virtue of the nature of the disease and aptly labeled "ping pong syphilis" by William E. Graham. If reinfections occur at an appreciable rate, then it seems perfectly obvious that the irreducible minimum of failures is slightly greater than the reinfection rate.

We have observed reinfections in numerous cases of conjugal syphilis. In several such instances by treating both the infected spouse and the exposed partner at the same time we have apparently prevented further reinfection in these couples.

The uniform response of chemotherapeutic treatment resistant syphilis to penicillin, as recently reported by Russell Nelson and others; the conspicuousness, by its absence, of penicillin resistant primary and secondary syphilis in many thousands of patients treated with penicillin; the lack of experimental or clinical evidence of a penicillin resistant strain of Treponema pallidum are, to say the least, unusual for a syphilotherapeutic remedy.

SUMMARY

The foregoing observations bring us squarely before the all important question In view of what is known today, how should early syphilis (primary and secondary) be treated?

1. The minimum dosage should be at least 2.4 million units of penicillin; the total time required should be a minimum of seven and one-half days; the interval

between individual intramuscular injections should be a maximum of three hours, day and night.

2. In addition to penicillin treatment the patients should receive either oxophenarsine hydrochloride intravenously, 40 mg. daily for 8 doses, or five injections, 0.2 Gm. each, of bismuth salicylate in oil on alternate days, or both. We ourselves prefer the addition of bismuth alone to the penicillin treatment schedule in order to obviate completely the possibility of arsenic reactions inevitable in a large series of cases when oxophenarsine hydrochloride is used even in small amounts.

3. A regular and thorough follow-up of all treated patients for a minimum of five years is essential to proper management. The follow-up must include adequate quantitative serologic determinations and adequate spinal fluid examinations.

4. The management of the occasional penicillin failure should be individualized and expertly planned.

5. We strongly urge that intimate contacts of the patients be treated coincidentally with the treatment of the patient, to avoid reinfection.

PENICILLIN IN THE TREATMENT OF NEUROSYPHILIS

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Our experience with the clinical application of penicillin in the treatment of neurosyphilis is now in the early part of its third year. During this time certain impressions have been gathered which indicate the trend of the results of treatment. However, the period of observation is still too short to justify any attempt to make conclusive deductions as to the merit of penicillin in the treatment of neurosyphilitic patients. In fact it is well not to draw conclusions as to the success or failure of any method of treating neurosyphilis until a minimum of three years and preferably five years has elapsed since the treatment was started. Accordingly, this report is a brief summary of the observations on 100 patients who had neurosyphilis and who were treated by various systems in which penicillin was employed during the past two years.

The reports in the literature are at variance as to the value of penicillin in the treatment of neurosyphilis. Gammon and his associates [1] expressed the opinion that it was of value and noted especially the influence on the reactions of the cerebrospinal fluid. They expressed the belief that larger doses (4,800,000 units) than had been used might offer better results. Rose [2] reported that penicillin is an active therapeutic agent in cases of neurosyphilis but that further observation was necessary to determine its real value. Thrasher [3] reported that penicillin given by the Swift-Ellis technic produced clinical improvement in most of the cases, with serologic changes following later. Rose and his associates [4] also reported observation of a group of patients who had neurosyphilis and who were given penicillin with fever therapy. They could find no striking difference at this period of these patients from patients treated by the older methods. Neymann and his associates [5] expressed the opinion that the results following penicillin therapy among patients who had dementia paralytica were unsatisfactory. All of the reports appearing in the literature are thus far colored with varying degrees of conservatism, and all emphasize the fact that a longer period of treatment and observation is necessary before conclusive deductions can be made.

It is generally agreed, as originally observed by Barksdale and Thompson,[6] that meningeal neurosyphilis responds satisfactorily, both clinically and serologically, to penicillin therapy. In fact, the single outstanding effect of the remedy among our patients seems to be the reversal of the reactions of the cerebrospinal fluid, especially the reduction of the lymphocytic cell count; the higher the degree of pleocytosis at the time when treatment is started, the more rapid and striking is the reduction of the number of cells. The other factors in the reaction of the cerebrospinal fluid also decrease but in less degree in the following order of frequency: protein, colloidal gold curve and serologic reactions. In the majority of our cases, although the cell count, protein and gold curve reactions returned to within normal limits, the serologic reactions of the cerebrospinal fluid tended to remain persistently positive. The significance of this often inactive, but nonetheless positive, reaction warrants further observation before it is interpreted as indicative of an impending highly successful therapeutic effect. From the clinical standpoint the most pronounced therapeutic effect that we have observed has been a gain of weight following a course of penicillin. One patient who had tabes dorsalis gained 50 pounds (22.7 Kg.) in four months following treatment, while a gain of 20 to 30 pounds (9.1 to 13.6 Kg.) was fairly common in other cases. The average gain of weight of patients who had various types of neurosyphilis was 10 pounds (4.5 Kg.). A reduction of "leg pains" occurred in 15 per cent of the cases in which this complication of tabes dorsalis was present and a "general improvement," consisting of somatic changes for the better, was noted in about a third of the cases.

The other clinical manifestations, such as ataxia, crises (gastric and rectal), incontinence, irritability, nervousness, dysarthria and changed personality, were not helped when penicillin was given alone.

We have given penicillin by intramuscular, intravenous and intraspinal routes to patients who had neurosyphilis. We have administered it while the patients were undergoing, and after they had undergone, malarial therapy and hyperthermy. The dose has varied from 1,200,000 to 8,000,000 units in a period of seven to ten days. The periods of observation range from September 1943 to October 1945 and, of the 100 patients treated, follow-up data, which form the basis of this report, are available on 70.

From the Section on Dermatology and Syphilology, Mayo Clinic.
Paper in a symposium on "The Penicillin Therapy of Syphilis" published under the auspices of the Section on Dermatology and Syphilology.
The work on this paper was done under a contract recommended by the Committee on Medical Research of the Office of Scientific Research and Development and the Mayo Clinic.

1. Gammon, G. D.; Stokes, J. H.; Beerman, Herman; Ingraham, N. R., Jr.; Lentz, J. W.; Morgan, H. G.; Steele, Willard; Rose, Elizabeth K., and Mayer, Verna: Penicillin in Neurosyphilis: Effect on Blood and Spinal Fluid, J. A. M. A. **128**: 653-654 (June 30) 1945.
2. Rose, A. S.: Penicillin Treatment of Neurosyphilis, Connecticut M. J. **9**: 522-525 (July) 1945.
3. Thrasher, J. R.: Intrathecal Penicillin in Cerebral Spinal Syphilis, J. Indiana M. A. **38**: 216-220 (July) 1945.
4. Rose, A. S.; Trevett, L. D.; Hindle, J. A.; Prout, Curtis, and Solomon, H. C.: Penicillin Treatment of Neurosyphilis: A Preliminary Report of Seventy Cases Followed from Four to Twelve Months, Am. J. Syph., Gonor. & Ven. Dis. **29**: 487-493 (Sept.) 1945.
5. Neymann, C. A.; Heilbrunn, Gert, and Youmans, G. P.: Experiments in the Treatment of Dementia Paralytica with Penicillin, J. A. M. A. **128**: 433-434 (June 9) 1945.
6. Barksdale, E. E., and Thompson, G. J.: Personal communication to the authors.

In September 1943, when we first used penicillin in the treatment of syphilis following the suggestions of Mahoney, Arnold and Harris,[7] the drug was difficult to obtain because of its limited production. Accordingly, we gave it intravenously because it had been demonstrated by Herrell [8] that, when given by this route to patients who had infectious diseases, much smaller amounts of the drug could be given with equally satisfactory results. The intravenous administration of penicillin by the continuous drip method produced technical difficulties with complications such as phlebitis that made this mode of administration cumbersome. In comparing the patients treated two years ago by the intravenous technic with those who were treated by the intramuscular technic, the results are in favor of the former. The outstanding serologic result of the entire group of patients occurred in a young man who had early asymptomatic neurosyphilis and who was given 1,200,000 units of penicillin intravenously in seven days and three spinal drainages. The grade 3 type of spinal fluid noted when treatment was started became completely negative within six months thereafter. Similar but less conspicuous results were encountered in 3 other cases in which this procedure was employed; however, at this time, although the intravenous method of giving penicillin may show a slight superiority to the intramuscular technic, the complications and technical difficulties of the former procedure offset its slightly better results.

The attempt to recover penicillin in the cerebrospinal fluid following its intravenous or intramuscular injection was an interesting part of our early experience. If doses up to 100,000 units were given in twenty-four hours, we were able to recover penicillin in the cerebrospinal fluid in varying amounts, but it is now known that when large doses, such as several million units, are given intramuscularly in a period of twenty-four hours, it is possible to recover penicillin in the cerebrospinal fluid in correspondingly large amounts. Even though we were able to recover penicillin in the cerebrospinal fluid following administration of comparatively small doses, it was thought advisable to employ also spinal drainage and intraspinal therapy. Five patients were given 55,000 units intraspinally by means of the Swift-Ellis technic. As previously noted, the most complete and most rapid serologic reversals occurred in the cases in which spinal drainage or intraspinal therapy was used in conjunction with the intramuscular use of penicillin.

The next procedure that we employed in this appraisal program was the combined use of fever therapy and penicillin. As it was easy to demonstrate that penicillin was ineffectual against Plasmodium vivax, patients undergoing malarial therapy were given at first 1,200,000 units of penicillin intramuscularly during ten days of the fever course. The dose was eventually increased up to a total of 8,000,000 units given intramuscularly at the rate of 50,000 units every three hours. Fifty-six patients, of whom 19 were tabetic, 25 were paretic and 12 had asymptomatic neurosyphilis, received the combination of penicillin and fever therapy.

We find it difficult to distinguish the results of the combined use of penicillin and fever therapy from those of fever therapy alone. In other words, it seems that, when penicillin was given during or after the fever course, there was no appreciable improvement of the clinical or serologic changes over those who received only the fever treatment. Of the neurosyphilitic patients who had tabetic and paretic forms of the disease and who received penicillin alone, the clinical therapeutic effects were essentially negligible when compared with those for a similar group given malarial therapy. Accordingly, the addition of penicillin to a fever course either by malarial inoculation or by the fever cabinet has added but little to the betterment of the patients.

The clinical improvement that was noted by some patients following penicillin therapy was of a vague type, which can be summarized by the general statement of the patient "I feel better." On attempting to analyze this, it was not possible to elicit any constant changes in the group as a whole, although gain of weight and slight decrease of pains in the legs were the outstanding results. The crisp type of improvement that occurs following malarial therapy was not observed in the group who received only penicillin. Increasing the dose to 8,000,000 units did not increase the degree of improvement, nor has the administration of three courses of penicillin of 2,400,000 units each, given at two month intervals, been of additional help in this regard. We have been impressed with the fact that improvement following administration of penicillin comes within two or three months after treatment, while improvement following malarial therapy may not be fully manifested for two or three years thereafter. Of the patients who had a high cell count in their cerebrospinal fluids, clinical improvement did not parallel the serologic improvement. No benefit was noted from use of penicillin alone among patients who had gastric crises, incontinence or ataxia, although 1 patient who had diplopia was improved. One tabetic patient who had been serologically negative for fifteen years and had severe pains in the legs became disoriented toward the end of the course of penicillin and died three months later without regaining his mental equilibrium.

In cases of early dementia paralytica in which penicillin alone was given, no appreciable clinical improvement was noted. The irritability, nervousness and forgetfulness were not significantly altered. However, in cases in which malarial therapy and penicillin were administered, the results were comparable to those of the malarially treated group. Our experience was equally unimpressive among the institutionalized paretic patients who had the advanced forms of the disease.

Patients who had the meningovascular types of neurosyphilis and 2 patients who had amyotrophic lateral sclerosis and positive serologic reactions of the blood and cerebrospinal fluid derived no benefit from 2,400,000 units of penicillin alone.

We have already mentioned the serologic changes noted in these cases. The return of the cell count, protein and colloidal gold curve to within normal limits is observed constantly, but it is not accompanied in the majority of cases by a corresponding degree of clinical improvement. This divergence of the clinical and serologic results warrants further observation and study. Perhaps in three or four years it may permit of more favorable interpretation than we can make of it at this time.

The serologic reactions of the blood likewise show a tendency to reduction of both the complement fixation

7. Mahoney, J. F.; Arnold, R. C., and Harris, Ad: Penicillin Treatment of Early Syphilis: A Preliminary Report, Ven. Dis. Inform. 24: 355-357 (Dec.) 1943.
8. Herrell, W. E.: Penicillin and Other Antibiotic Agents, Philadelphia, W. B. Saunders Company, 1945.

and the titer but, as noted in the studies of the cerebrospinal fluid, the reversals to negative or weak positive and the reduction of the titer are not paralleled by similar clinical improvement.

SUMMARY

The preliminary impressions gained in the past two years by treating 100 patients who had various types of neurosyphilis with different methods in which penicillin was employed are summarized as follows:

1. The outstanding result common to most of the patients in this series following the use of penicillin was a return of the cell count, protein and gold curve to within normal limits in the studies of the cerebrospinal fluid with reduction of the strength of the complement fixation and titer reactions of the blood.

2. The outstanding clinical effects as noted among patients who had objective and subjective signs of neurosyphilis were a gain of weight and a reduction of severity and frequency of the pains in the legs. The early symptoms of dementia paralytica were not influenced.

3. The patients who had meningeal neurosyphilis were most responsive both clinically and serologically, while patients who had the parenchymatous forms of the disease were helped only slightly if at all.

4. The outstanding serologic results noted were among the patients who had asymptomatic neurosyphilis and who received penicillin intravenously in doses approximating 1,200,000 units in a week, in association with either three spinal drainages or intraspinal treatments (Swift-Ellis type).

5. Penicillin given in combination with fever therapy, either malarial or by means of the fever machine, did not improve the clinical results noted from fever treatment alone.

6. The administration of penicillin by the intravenous, intramuscular or intraspinal route, alone or in combination with fever therapy, both malarial and by machine, leads us to believe that penicillin alone is not capable of controlling the parenchymatous forms of neurosyphilis. However, in cases of the meningeal forms of the disease and in those in which there was a high degree of pleocytosis in association with asymptomatic neurosyphilis, the results thus far are encouraging.

7. In occasional cases of neurosyphilis penicillin therapy produces clinical and serologic results that are outstanding. However, these favorable results are noted in only a few cases and often appear when least expected. It is not possible at this time to account for such great therapeutic discrepancies.

Physician's Obligation to Overweight Patients.—The patient who comes to the physician for reduction of weight must be convinced that (*a*) his obesity is due to eating more food than he requires, and (*b*) the only way that he can return to normal is by the slow, steady, difficult road of a proper diet. The patient should understand the danger of drugs for this condition and the futility of other methods of treatment. He should be told of the hazards of obesity, and perhaps an appeal may be made to his vanity or to his pride of his stamina and ability to manifest self control. It must be explained that the results will be achieved slowly and will not be spectacular. A diet list should be prepared which is as varied and enjoyable as possible, which furnishes bulk and ample vitamin requirements, and which has a caloric value of approximately 1,000 to 1,200 calories daily.—Smillie, Wilson G.: Preventive Medicine and Public Health, New York, Macmillan Company, 1946.

THROMBOCYTOPENIC PURPURA IN PREGNANCY AND IN THE NEWBORN

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According to Polowe,[1] who reviewed the literature in 1944, 62 cases of pregnancy complicated by thrombocytopenic purpura have been reported. Most of the patients had no evidence of purpura before pregnancy, but at varying times during pregnancy acute hemorrhagic purpura developed with bleeding from all the mucous membranes and into the skin. The mortality was about 55 per cent for the mothers and was slightly higher for the infants. The maternal mortality was usually due to uterine bleeding following delivery, which was often premature. Some of the infants are reported to have died of hemorrhage and part of these were known to have had thrombocytopenia. That congenital thrombocytopenic purpura[2] may occur is suggested by the numerous cases reported in which both the mother and the infant have been affected. However, not all of the infants have been affected, and it may be that the tendency for thrombocytopenia is inherited. The patient who is the subject of this report is known to have had chronic purpura and thrombocytopenia since the age of 4. She became pregnant against medical advice but went through pregnancy normally except for postpartum hemorrhage, which was not too difficult to control. She had a healthy baby except that it has thrombocytopenia. Because of the danger of this complication of pregnancy, it was thought that this case should be recorded in detail so that thrombocytopenia might be suspected in patients who bleed after delivery from unknown cause.

REPORT OF CASE

History.—Mrs. C. M., aged 22, primigravida, referred to me in her fifth month of pregnancy by Dr. S. R. Wallis of Lihue, Kauai, T. H., is of Irish-German descent. Her maternal great-grandmother and grandmother were "bleeders." Her own mother, who bruises easily, had a severe postpartum hemorrhage requiring transfusion following her birth. A platelet count taken on Sept. 10, 1945 on her mother was 160,000 and the bleeding time was 3½ minutes. The patient has no sisters but has one brother who has shown no tendency to bleed.

At the age of 4 the patient fell and bruised her hip, and a large hematoma formed. Investigation revealed that she had a prolonged bleeding time and thrombocytopenia. Since that time she has always had purpuric spots on her body, which have usually formed where she bumps herself but sometimes they have formed without trauma. Her bleeding time has usually been much prolonged. During her childhood she had frequent nosebleeds, which occasionally required packing to control. She has had spontaneous bleeding from her gums at times, and tooth sockets have had to be packed after extractions. She first menstruated at 13 years of age and thereafter her menses came every twenty-eight days and lasted from seven to nine days. The flow was profuse for the first six days and was enough to saturate nine vulvar pads in twenty-four hours. At 19 years of age her menses were excessive and she became very anemic. At that time she consulted Dr. Ernestine Hamre, hematologist of Honolulu, T. H., who reported that the hemoglobin was 6 Gm., the blood platelets numbered 62,000 and the clot retraction was very poor in twenty-four hours. The hemoglobin returned to normal rapidly on treatment with ferrous sulfate.

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1. Polowe, David: Splenectomy in Pregnancy Complicated by Thrombocytopenic Purpura Hemorrhagica, J. A. M. A. **124**: 771 (March 18) 1944.
2. Sanford, H. N.; Leslie, E. I., and Crane, M. M.: Congenital Thrombocytopenia, Am. J. Dis. Child. **51**: 1114 (May) 1936.

The first day of her last menstrual period was Sept. 11, 1944 and the expected day of delivery was June 18, 1945. She reported to me on Feb. 16, 1945. Physical examination was negative except for bruised spots on her legs and arms and showed a normal pregnancy of five months duration. The spleen was not palpable. The clotting time was 4½ minutes and the bleeding time was 8½ minutes. Her blood was type A and was Rh positive. The blood pressure and urine were normal and the blood Wassermann reaction was negative. She was given 3 grains (0.2 Gm.) of ferrous sulfate at mealtimes, 1 mg. of vitamin K daily and one polyvitamin capsule daily. She was put on a balanced diet including milk and iodized salt. The bleeding time was checked after one week and had dropped to 4 minutes, and after two weeks it had dropped to 2 minutes. Arrangements were made with two type A blood donors to give blood for transfusion in case of an emergency. The patient was warned to report any abnormal signs or symptoms immediately. She progressed normally except for a nosebleed lasting three minutes on April 14. She continued to get new purpuric spots wherever she bruised herself.

Normal labor began on June 12, which was six days before the expected date of delivery. After ten hours of labor, when the fetal head was fully engaged and the cervix was almost fully dilated, the patient was given 4½ grains (0.3 Gm.) of seconal and 90 cc. of rectal ether in oil. Thirty minutes after receiving this medication she was totally amnesic and quiet and did not require any further anesthesia. After twelve hours of normal labor the baby was delivered by low forceps, no episiotomy being necessary. A smooth solid blade obstetric forceps was used. The placenta complete with the membranes delivered spontaneously by the Duncan mechanism three minutes after the baby was born, and about 300 cc. of blood was lost at the time. After delivery of the placenta inspection revealed no tears of the cervix, vaginal walls, labia or perineum. There was no bleeding from the uterine cavity, and the vaginal mucosa appeared normal. Ergonovine maleate 1/320 grain (0.2 mg.) was given intramuscularly immediately after delivery of the placenta.

Fifteen minutes following delivery of the placenta a very slight amount of vaginal bleeding was noted, though the uterine fundus was very firm. Another dose of ergonovine maleate was given and the patient was put to bed. For the next hour the vaginal bleeding continued, though there was never more than a very slight flow of blood. Three vulvar pads became almost saturated in one hour. At this time the pulse rate was 120 per minute and the patient had become pale. The systolic blood pressure was 110 mm. of mercury. She was taken back to the delivery room, and the blood donors were called. The vagina was found to be filled with a large, firm blood clot which was attached to the vaginal walls. In removing the clot it was seen to extend through a ragged opening in the left vaginal wall and to be continuous with a clot in the tissue. The opening in the vaginal wall was at the exact location at which the left blade of the obstetric forceps had come in contact with the tissue, and it extended to the labia minora. It was not present at the time of inspection immediately following delivery of the placenta. There was very slight bleeding from the uterine cavity, but a steady stream of blood came from the rent in the vaginal wall. The tear in the vaginal wall was repaired with three sutures. The uterine cavity and the vagina were packed with 4 yards of heavy 3 inch gauze and the patient was given 1/6 grain (0.01 Gm.) of morphine sulfate. An intravenous infusion of 1,000 cc. of 5 per cent glucose in isotonic solution of sodium chloride was started and was followed by 500 cc. of citrated blood. When this treatment was completed after four hours the pulse had slowed down to 100 and was of good quality. The patient was awake and reacted normally for a patient who had had rectal ether eight hours previously.

The vaginal and uterine packs were left in for thirty-six hours, during which time there was slight bleeding through the packs. When the packs were removed there was still some bleeding, so the vagina was repacked. A blood count taken at this time showed 56 per cent hemoglobin with 2.5 million red blood cells. Another 500 cc. of citrated blood was given. The second vaginal pack was removed twenty-four hours after insertion, and thereafter there was only a normal amount of lochia. A blood platelet count made five days after delivery was 60,000, and a specimen of blood taken at this time showed no clot retraction in twenty-four hours. Ten days after delivery the platelet count was 34,640, the hemoglobin was 82 per cent, the red blood cell count was 4.3 million and the bleeding time was ½ minute.

During the puerperium the patient received 1/320 grain of ergonovine maleate every eight hours for three days and 3 mg. of vitamin K daily for eighteen days. She was able to nurse the baby normally. Her temperature did not go higher than 100 F. Vaginal examination on the eleventh postpartum day when the patient was discharged revealed that the involution of the pelvic organs was progressing normally. The tear in the vaginal wall had healed. Eighteen days after delivery the bleeding time was 6 minutes, and twenty-five days after delivery it was 3½ minutes. Thirty-seven days after delivery the bleeding time was 2 minutes, and the platelet count was 36,300. Seventy-five days post partum the bleeding time was ¼ minute, and the platelet count was 90,000. The patient had vaginal discharge similar to menstrual flow from the twenty-eighth day after delivery until the forty-second day and from the seventy-seventh day until the eighty-third day.

Description of the Infant.—The baby was a normal boy and weighed 7 pounds 14½ ounces (3,586 Gm.) at birth. His spleen was not palpable. There was a faint mark on the right cheek where the forceps blade had pressed. He was offered his mother's breast and 2 ounces of sterile water every four hours. Sixty hours after birth it was noted that the forceps mark which had almost disappeared had suddenly become dark blue. Also there was one purpuric spot on his right forearm. The tourniquet test for petechiae was negative and there was no blood in the stool. He was given 2 mg. of vitamin K intramuscularly. Seventy-two hours after birth there were both streaks of blood and liquid blood mixed with the normal stool. A blood count revealed 118 per cent hemoglobin, 6.2 million red blood cells and 18,570 blood platelets. The coagulation time was 5 minutes, the bleeding time was 4 minutes and the blood was type A. He was given 50 cc. of pooled human plasma intravenously immediately and 30 cc. after twelve hours. Each succeeding stool contained less blood, so that there was none after thirty-six hours and the purpuric lesions gradually faded. On the tenth day after birth the platelet count was 28,800 and the bleeding time was ½ minute. He gained rapidly on breast milk and weighed 8 pounds (3,630 Gm.) on the eleventh day of life when he was discharged with his mother. On the thirty-seventh day of life the bleeding time was 1 minute and the platelet count was 20,820. On the seventy-fifth day of life the bleeding time was only ½ minute and the platelet count had risen to 175,000. He had had no purpuric spots since leaving the hospital and was developing normally.

COMMENT

To recognize and to diagnose thrombocytopenic purpura in pregnancy before an acute attack and before delivery, it is necessary to keep this complication in mind and to suspect it in all patients who have shown any abnormal bleeding tendency either before or during pregnancy. Patients who have had frequent nosebleeds or who bruise easily may have thrombocytopenia. Patients who have close relatives that are "bleeders" should be suspected. Patients who have had postpartum hemorrhage at a previous delivery should be suspected. Although in thrombocytopenic purpura the bleeding time and the platelet count may at times be normal, the bleeding time is usually prolonged and the platelet count is usually subnormal. The clotting time is normal, but clot retraction is very poor or absent in twenty-four hours. In the acute stage the tourniquet test is positive for petechiae.

The treatment of choice in acute hemorrhagic purpura is multiple small transfusions, preferably direct. Transfusions of about 200 cc. of blood should be given as often as is necessary, though at times larger transfusions may have to be given as a life saving procedure.

Some patients will continue to bleed after repeated transfusions, and in these splenectomy will usually be followed by an abrupt cessation of bleeding. However, splenectomy should be resorted to only as a life saving procedure and after conservative treatment has failed. Although there is usually an immediate improvement after splenectomy, time has demonstrated that this may be only temporary and that the patient may again develop acute hemorrhagic purpura. Splenectomy seems to be of most benefit for patients who have splenomegaly.

The development of late toxemia in a patient with thrombocytopenic purpura is a more serious complication than it is in a patient who is otherwise normal. The placentas of patients with late toxemia usually contain many infarcts, and these are often associated with a small amount of bleeding at the time of formation. It seems only logical to suppose that if the toxemic patient also has thrombocytopenia the bleeding that occurs at the time of placental infarction may continue and may lead to placental separation and to massive intrauterine hemorrhage.

Every pregnant patient who either has purpura or has a tendency to bleed should be hospitalized at the onset of labor. In the past almost all deaths of such patients have been caused by bleeding following delivery. Few of these patients bleed profusely at the time of delivery, but practically all of them bleed slowly and continuously for several hours or days following delivery. Owing to the abnormal clot formation the uterine sinuses continue to bleed although the uterine muscle is firmly contracted. The trauma produced by the fetus passing through the vagina is enough to cause bleeding beneath the vaginal mucosa of patients with thrombocytopenia. Enough bleeding may occur to produce a hematoma, which may rupture into the vagina and continue to bleed.

Patients who are known to have thrombocytopenia should have the uterine cavity and the vagina packed firmly with gauze immediately after delivery of the placenta. The pack should be left in for twenty-four to thirty-six hours. If vaginal bleeding recurs, the vagina should be inspected to see if the blood is coming from the uterus or from the vaginal walls. Then the uterus or the vagina or both should be repacked, depending on where the blood is coming from. Episiotomy is to be avoided on patients with thrombocytopenia unless absolutely necessary. To do an episiotomy on such a patient is to open another avenue of bleeding which may be very difficult to control.

All infants born alive to mothers with thrombocytopenia should be blood typed immediately, and the bleeding time and a blood platelet count should be made. The treatment of hemorrhagic purpura in newborn infants is the same as in any one else, namely, repeated small transfusions. The purpura and the bloody stools were observed in the infant of this report before there was any appreciable loss of blood, so pooled human plasma was given instead of blood. Although the infant in this case lost only 6 per cent of his body weight by the time the mother's milk was plentiful, he developed purpuric lesions and bloody stools after three days of starvation. He had the forceps bruise on his face from birth, but it did not become purpuric until the third day. As soon as he received an adequate amount of breast milk the bleeding stopped and has not recurred. It is very probable that the milk helped as much as the plasma.

After studying the subject of thrombocytopenia and pregnancy, one is forced to the conclusion that pregnancy is far too dangerous an undertaking for a woman who has chronic thrombocytopenic purpura. If a patient has an attack of acute thrombocytopenic purpura and recovers completely, as shown by a normal platelet count, normal bleeding time and normal clot retraction, pregnancy would not seem to be too great a risk. If pregnancy in a heretofore normal person is complicated by an acute attack of thrombocytopenic purpura, there seems to be little to gain by terminating pregnancy.

Clinical Notes, Suggestions and New Instruments

PRIVINE DEPENDENCE OF TWO YEARS' DURATION

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Privine hydrochloride, a brand of naphazoline, was first described by Hild[1] in April 1941 as a preparation to reduce swelling of the nasal mucosa. Hild stated that "one important advantage of privine, compared with epinephrine, lies in the fact that it causes no reactive hyperemia and that it has only a relatively slight toxicity, if any." The drug appeared on the American market in October 1942. According to Fabricant and Van Alyea[2] "the 0.1 per cent solution of privine hydrochloride is a nontoxic nasal vasoconstrictor which has given satisfactory use in rhinologic practice." In August 1944 Gollom[3] reported persistent nasal congestion in more than 30 cases following the use of privine. Feinberg and Friedlaender[4] later reported over 75 cases in which symptoms of nasal congestion were aggravated or prolonged by the continued use of privine. The following case may be of the longest duration which has yet been noted:

Mrs. B. E., aged 35, a housewife, was seen on Oct. 31, 1945 complaining of nasal obstruction of two years' duration. In 1934 and 1937 she had had some treatment for sinus trouble. In December 1943 she noticed nasal congestion and tried several home remedies which did not seem to work very well. She then saw a nose and throat specialist, who recommended privine. This seemed to give her remarkable relief, but this lasted only about three to four hours each time and she continued to use the product every three to four hours for a total of 1 ounce weekly. A short time later the patient saw another physician, who recommended the use of different nose drops, but these gave poor relief so she reverted to the use of privine. In July 1945, after seven months of continuous use of this preparation, she returned to a city on the West Coast, where she saw her family doctor. He irrigated her sinuses with mild protein silver and prescribed thyroid without relief of the nasal congestion. In September 1945 she saw a nose and throat specialist, who said there was no sign of infection in her sinuses at that time, merely swelling of the mucous membranes.

She continued to use privine until she was seen in October 1945. Physical examination was essentially negative except for some tenderness of both frontal sinuses and both antrums. The mucous membranes of the nose were somewhat pale, but there was no congestion (the patient had had her usual dose of privine about two hours previously).

From the Food and Drug Administration, Federal Security Agency.

1. Hild, A. M.: Privine Cilia, a New Preparation for Reducing Congestion of the Nasal Mucosa, Schweiz med. Wchnschr. **71**: 557-561 (April 26) 1941.

2. Fabricant, N. D., and Van Alyea, O. E.: A Note on the Evaluation of Privine HCl as a Nasal Vasoconstrictor, Am. J. M. Sc. **205**: 122-125 (Jan.) 1943.

3. Gollom, J: The Problem of Nasal Medication, with Particular Reference to Privine Hydrochloride 0.1 Per Cent, Canad. M. A. J. **51**: 123-126 (Aug.) 1944.

4. Feinberg, S. M., and Friedlaender, Sidney: Nasal Congestion from Frequent Use of Privine Hydrochloride, J. A. M. A. **128**: 1095-1096 (Aug. 11) 1945.

Since it was felt that the original cause of the patient's nasal congestion had long since disappeared and that the present difficulty was due to the compensatory reaction following nasal decongestion, it was recommended that she discontinue privine completely. To prevent any possible headache or other symptoms due to withdrawal of the drug, she was given a supply of ephedrine capsules, ⅜ grain (0.024. Gm.) each, for use during the day and ephedrine with a barbiturate for use in the evening or at night. The patient was quite apprehensive about discontinuing the privine, since she had depended on it so completely for the past twenty-three months. However, she agreed to stop it and to use acetylsalicylic acid liberally if any headache developed. On arising the following morning her nose was somewhat blocked and she took one capsule of ephedrine. That night she took one of the ephedrine-barbiturate capsules because of some nasal congestion and a fear that she would not be able to sleep. The following day, after she had entered a smoky room, her nose became congested again and she took a second ephedrine capsule without any noticeable benefit. She obtained relief by leaving the room. For the next four nights she took one of the ephedrine-barbiturate capsules before going to bed. She then discontinued all medication and until the present (three months later) has had to use none at all. The nasal mucous membrane at this time appears essentially normal.

SUMMARY

1. A case of privine dependence of twenty-three months' duration was observed.

2. Privine and other potent nasal decongestants are valuable when used properly.

3. To avoid dependence on these drugs, they should be discontinued as soon as the immediate need for them disappears.

TREATMENT OF UREMIA AFTER ACUTE RENAL FAILURE BY PERITONEAL IRRIGATION

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Uremia resulting from acute renal damage is frequently fatal, because the renal lesion requires more time for healing than the lethal effects of the uremia will permit. Such potentially reversible renal lesions include those resulting from incompatible transfusions, sulfonamide toxicity, massive trauma, suppression of kidney function following surgical trauma to the urinary tract, toxemia of pregnancy, mercury poisoning and certain forms of acute glomerulonephritis.

Available methods do not provide for sufficient excretion of retained substances by extrarenal pathways. Clearance of the circulating blood through an artificial dialyzing membrane is one of the recent methods advocated.[1] But the technical difficulties involved, the need of adequate heparinization and the additional vascular load such a method imposes are serious handicaps to the acceptance of this method.

The use of the peritoneum as a dialyzing membrane for extrarenal excretion is not new. Efforts to utilize this structure to treat uremia have been made in animals and in a few instances in man but without success.[2]

In a preliminary study [3] we observed that a properly performed peritoneal irrigation can remove crystalloids from the blood with an efficiency adequate to substitute for renal function and to sustain life for many days. The fluid for irrigation is designed to avoid depleting the plasma of its electrolytes and glucose and to combat acidosis.[4] It is mammalian Tyrode's solution to which is added penicillin for bacteriostasis of susceptible organisms, heparin to inhibit fibrin deposition in the peritoneal cavity and additional glucose. The technic developed and the experimental findings are described in detail elsewhere.[3] Briefly, it consists in the introduction of an inlet and outlet tube into the peritoneal cavity through incisions under local anesthesia. The sterile solution, prepared in large volume (20 to 35 liters per day), is run in by gravity at a controlled rate for maximum urea clearance of the blood and drained from the peritoneal cavity as fast as it enters the outlet tube. The outlet tube is a stainless steel sump drain [5] attached to a continuous suction system to draw out fluid as rapidly as it collects.

We report herewith a successful application of peritoneal irrigation to a patient who was expected to succumb to uremia following parenchymatous injury to the kidneys from sulfathiazole administration.

REPORT OF CASE [6]

H. Y., a man aged 51, entered the hospital complaining of headache, nausea, vomiting, diarrhea, a skin rash and oliguria of five days' duration. Following a transurethral prostatectomy and resection of a bladder diverticulum one year earlier he had contracted asymptomatic pyuria, which persisted intermittently thereafter. Sulfadiazine therapy had been given postoperatively but not thereafter. Three weeks before the present admission he developed a painful tender swelling in the right groin, diagnosed as an inflammation of the vas deferens, for which 4 Gm. of sulfathiazole daily was prescribed. This dose was taken daily for fourteen days prior to hospital entry. Five days before admission oliguria was first noted, and for three days before admission he was virtually anuric (30 cc. output per day).

On admission the patient was semistuporous. A maculopapular rash was present on the trunk and extremities. The abdomen was distended with fluid. The rectal temperature was 102.8 F., deep respirations were 25 to 30 per minute, the pulse rate was 114 per minute, the blood pressure 136/86, the red blood cell count 4.6 million, hemoglobin 13.6 per hundred cubic centimeters, the white blood cell count 9,900 (70 per cent polymorphonuclear cells, 26 per cent lymphocytes). A chest film showed probable bronchopneumonia of the left lower lobe.

Penicillin 25,000 units was given every three hours. The temperature became normal by the third hospital day and remained so thereafter.

During the first four hospital days the daily urine output was 30 cc., 200 cc., 0 cc. and 0 cc. respectively. Oral fluid was supplemented with intravenous 5 per cent glucose in water until the daily intake ranged from 5 to 7 liters per day. Increased ascites and generalized edema developed.

On the third hospital day cystoscopy revealed edema and inflammation of the bladder mucosa. Ureteral catheterization disclosed no obstruction of the ureters. The renal pelves were empty and no crystals were found. The urologist (Dr. E. G. Crabtree) considered the situation due to parenchymatous injury from sulfathiazole and the outlook grave.

On the fifth hospital day the patient's condition was critical. He was delirious and stuporous, distended and acidotic and had generalized and pulmonary edema. The blood nonprotein nitrogen was 185 mg. per hundred cubic centimeters, the blood urea nitrogen 126 mg. per hundred cubic centimeters and the plasma carbon dioxide combining capacity 23 volumes per cent. The patient was referred to us for treatment.

Peritoneal irrigation was instituted. A mushroom catheter was inserted on one side, and a sump drain on the other side of the peritoneal cavity. Considerable ascitic fluid with a urea content of 92 mg. per hundred cubic centimeters was aspirated.

From the Surgical Research Department, Beth Israel Hospital, and the Department of Surgery, Harvard Medical School.

The work described in this paper was done under a contract recommended by the Committee on Medical Research between the Office of Scientific Research and Development and Harvard University.

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2. Ganter, G.: Ueber die Beseitigung giftiger Stoffe aus dem Blute durch Dialyse, München. med. Wchnschr. **70**: 1478, 1923. Rosenak, S., and Siwon, P.: Experimentelle Untersuchungen ueber die peritoneale Ausscheidung harnpflichtiger Substanzen aus dem Blute, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **39**: 391, 1926. von Jeny, A.: Kann das Bauchfell bei Urämie die Rolle eines natuerlichen Dialysators uebernehmen? Ztschr. f. klin. Med. **122**: 294, 1932. Balazs, J., and Rosenak, S.: Zur Behandlung der Sublimatanurie durch peritoneale Dialyse, Wien. klin. Wchnschr. **47**: 851, 1934.

3. Seligman, A. M.: Frank, H. A., and Fine, Jacob: Treatment of Experimental Uremia by Means of Peritoneal Irrigation, J. Clin. Investigation, to be published.

4. Since water soluble vitamins may be removed by peritoneal irrigation, they are given parenterally in large dosage.

5. Babcock, W. W.: Spreading Peritonitis: Its Prevention and Treatment, Pennsylvania M. J. **43**: 1093, 1940. Burnett, W. E.: Rosemond, G. P., and Caswell, H. T.: The Use of the "Sump" Drain in Peritoneal Infection. Surg. Clin. North America, December 1944, p. 1316.

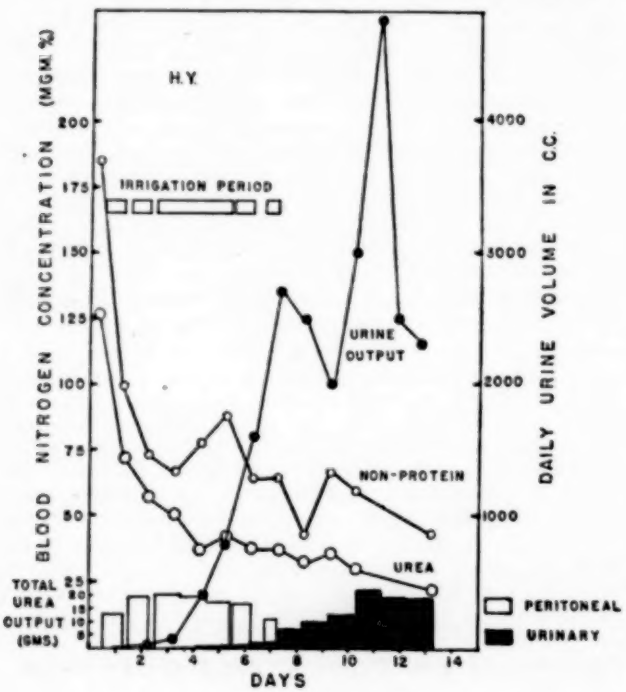
6. Dr. Louis Kramer referred this patient to us for treatment.

as much as the plasma.

(Aug. 11) 1945.

The peritoneal irrigation was conducted without difficulty and produced no discomfort. All outflow fluid was collected.

The accompanying chart shows for each day the changes in blood level of nonprotein and urea nitrogen, the volume of urine excreted and the total amount of urea present in the peritoneal drainage fluid and in the urine. The table shows



Changes observed each day.

the concentrations of urea in urine and in peritoneal drainage fluid, together with the calculated urea clearances. Blood sodium chloride remained high (660 mg. per hundred cubic centimeters).

On the fourth day of irrigation after fourteen days of oliguria or anuria the urine volume increased to 400 cc. Thereafter the volume excreted increased steadily. The specific gravity of the urine remained low (1.005 to 1.010) throughout the period of observation, but the urea concentration in the urine, which at first was no higher than that of the plasma, steadily rose until it reached 400 mg. per hundred cubic centimeters on the day of discharge from the hospital. Urinary urea clearance values improved steadily but remained well below normal values up to the time of discharge.

On admission the small amounts of urine excreted were alkaline in spite of the patient's acidosis. When diuresis started, the urine became acid. The urine on admission showed the Friedlaender bacillus and many white cells. Throughout the period of observation the urine contained small to moderate amounts of albumin and white cells but no red cells, casts or crystals.

Clinical improvement, except for the aggravation of symptoms of ileus on the third day, paralleled that of the clinical chemistry. Acidosis persisted, probably on a starvation basis. Therefore 400 Gm. of glucose was added to the irrigation fluid on the fourth day of irrigation, and by the fifth day the carbon dioxide combining capacity had risen to 40 volumes per cent.

Since the patient had received large volumes of fluid before irrigation was started and was edematous as a result, intravenous fluid therapy during the first two days of irrigation was cut to 2,000 to 3,000 cc. of 10 per cent glucose in water daily, to provide additional carbohydrate. It was felt that the patient could dispose of the excess interstitial fluid and the intravenous fluid through the peritoneal pathway. But when the slight degree of pulmonary edema previously present increased on the third day of irrigation, all intravenous therapy was stopped for the subsequent forty-eight hours. Thereafter, when the evidence of pulmonary edema had disappeared, glucose and amino acids were supplied intravenously as required.

At about the same time (the third day of irrigation) polymorphonuclear cells and colon and paracolon bacilli appeared in the peritoneal drainage fluid. This plus the increase in the signs and symptoms of ileus suggested the onset of peritonitis. Miller-Abbott tube therapy was started. After drainage through the Miller-Abbott tube of some 3,000 cc. of fluid daily for two days, edema decreased. Penicillin administration and peritoneal irrigation were continued. The patient showed mental depression but no clinical evidence of sepsis; he remained afebrile with a normal pulse and a normal total and differential white blood cell count. Edema disappeared by the fifth day of irrigation, and the patient was much improved except for mental depression, recurring intestinal distention and intolerance to food by mouth. As the volume and quality of urine improved, the irrigation was performed intermittently and was discontinued entirely seven days after it was started. The following morning the nonprotein nitrogen was 43 mg. per hundred cubic centimeters and the blood urea nitrogen 33 mg. per hundred cubic centimeters. The irrigation tubes were removed without discomfort. Mild wound sepsis was present, but the wounds healed rapidly.

Because the organisms growing in the peritoneal fluid were not susceptible to penicillin, streptomycin [7] (which was found to be effective in vitro in a concentration of 500 units per cubic centimeter against the organisms involved [8]) was injected into the peritoneal cavity (1 million units in 1 liter of saline solution) the day after termination of the irrigation and again on the subsequent day. There was no unfavorable reaction to this procedure.

It is not possible to evaluate the effect of streptomycin because there was no evidence of peritonitis aside from the presence of leukocytes and bacteria in the drainage fluid, and ileus. However, the patient's mental depression and ileus cleared considerably thereafter. General improvement continued, the Miller-Abbott tube was removed and the patient was able to take a full diet and 3,000 to 5,000 cc. of fluid orally per day.

Concentrations of Urea and Calculated Urea Clearances

	Peritoneal Fluid			Urine			
Day *	Flow Rate, Cc./ Min.	Urea N Conc., Mg. per 100 Cc.	Blood Urea Clearance,† Cc./Min.	Flow Rate, Cc./Min.	Urea N Conc., Mg. per 100 Cc.	Blood Urea Clearance,† Cc./Min.	Blood, Urea N Conc., Mg. per 100 Cc.
1	25	24.4	8.4	....	....	....	72.7
2	33	27.4	14.5	0.021	85.0	0.029	62.2
3	25	28.1	13.8	0.041	60.0	0.053	50.6
4	25	26.0	17.2	0.280	75.0	0.55	57.8
5	13	31.2	9.5	0.550	50.0	0.65	42.8
6	35	21.0	19.4	1.10	62.5	1.82	37.8
7	29	26.5	21.0	1.87	32.5	1.65	38.7
8	..	....	....	1.74	145.0	7.60	33.3
9	..	....	....	1.40	255.0	9.70	38.8
10	..	....	....	2.30	193.0	14.80	30.0
11	..	....	....	3.30	225.0	24.70	
12	..	....	....	1.74	370.0	26.00	
13	..	....	....	1.60	392.0	28.50	22.0

* Days from start of peritoneal irrigation; correspond with days indicated in the chart.

† Clearance (C) calculated from equation (Moller, McIntosh and Van Slyke: J. Clin. Investigation **6**: 427, 1928) $C = \frac{UV}{B}$, where V equals the rate of flow (cc. per min.) of peritoneal fluid or urine, U equals the urea nitrogen concentration (mg. per hundred cubic centimeters) of peritoneal fluid or urine, and B equals the urea nitrogen concentration (mg. per hundred cubic centimeters) of blood. The value of B at the end of each collection period of urine or peritoneal fluid was used in the calculation.

The specific gravity of the urine remained low, 1.008 to 1.012. The patient was up and about, normal mentally and feeling well, although he showed a moderate anemia (red blood count 3.6 million, hemoglobin 70 per cent). He was discharged from the hospital a week after peritoneal irrigation was stopped.

At the time of discharge renal function, in terms of urea clearance, was about one third of normal and was improving

7. Dr. D. F. Robertson of Merck & Co. supplied the streptomycin.
8. Dr. Fritz Schweinburg performed this test.

ation, to be published.

6. Dr. Louis Kramer referred this patient to us for treatment.

daily. It was adequate to maintain normal blood levels of nitrogenous substances and to prevent acidosis. The phenolsulfonphthalein excretion test showed 20 per cent excretion in one and three-fourths hours, i. e. about one third of the normal value. Four weeks later the renal urea clearance was greater than half of normal and the phenolsulfonphthalein excretion was normal.

COMMENT

Peritoneal irrigation in this patient corrected uremia and provided an adequate substitute for renal function until recovery of renal function occurred. Clinical improvement followed closely the progressive improvement in blood chemistry. We cannot state with finality that the patient would have died without peritoneal irrigation. In any case the incidence of recovery from acute renal failure will doubtless be increased by any method that eliminates the uremic state and its serious complications early.

The chart and table demonstrate the progressive recovery of renal function which began fourteen days after kidney shutdown and the fourth day after peritoneal irrigation was started. The volume output became normal shortly after diuresis began, but the recovery of concentrating function was slower. At the time the patient was discharged, urea clearance and phenolsulfonphthalein excretion were only some 30 per cent of normal. This, however, was adequate to keep the blood urea and nonprotein nitrogen levels within normal limits. Further improvement in renal function occurred in the following four weeks. Sufficient time has not elapsed to determine the full extent of return of renal function.

The speed with which peritoneal irrigation lowers the blood level of retained excretory products depends on the amount stored in extravascular compartments and will vary with the body weight and degree of edema. It also depends on the rate of flow of the irrigating fluid. Data obtained from other patients[9] show that the flow rate is optimal between 40 and 60 cc. per minute. At this rate 15 to 20 Gm. of urea can be removed in twenty-four hours, which is equivalent to the average rate of urea production on a normal diet and considerably exceeds that on a low protein diet. The efficiency of peritoneal irrigation does not diminish with time.

In the treatment of this patient the peritoneal drainage flow rate averaged 25 cc. per minute and the daily urea output varied from 12 to 20 Gm. per day. The blood urea clearance by peritoneal irrigation averaged 14.8 cc. of blood per minute and was as high as 21 cc. per minute. This was sufficient to correct the uremic state. An average peritoneal irrigation urea clearance value of 15 cc. per minute ordinarily should be an adequate renal substitute, because not more than 10 per cent of the average normal "maximum" renal urea clearance value (75 cc. per minute) is necessary to prevent the accumulation of excretory products.[10] Hence peritoneal irrigation may be discontinued when a patient of average size, on a normal or less than normal protein intake, is free of uremia and the recovery of renal urea clearance of the blood equals or exceeds 7.5 cc. per minute.

The primary hazard in and the only important limitation to the use of peritoneal irrigation is the danger of peritonitis. Peritonitis probably did develop in the case reported, for gram-negative organisms and leukocytes were found in the peritoneal drainage fluid, and the ileus already present seemed to grow worse. However, no other evidence of peritonitis was present.

The possible sources of peritoneal contamination by organisms are several: (1) errors in preparation of sterile fluid and apparatus, (2) contamination while shifting attachments to refilled carboys and (3) possible entry of organisms from the skin along the tube tracts or from room air through the sump drain. The first two errors can be largely counteracted by the use of bacterial filters in the delivery circuit. A thick gauze dressing is used as an air filter over the sump. As a further precaution antibacterial chemotherapy is used by giving penicillin intramuscularly as well as in the irrigating fluids for gram-positive organisms and streptomycin for gram-negative organisms. Improperly prepared solutions may be irritating to the intestinal serosa and thereby might facilitate the migration of bacteria from the intestine into the peritoneal cavity; properly prepared solutions seem not to impair the integrity of the peritoneum. Considering the gravity of the problem faced in uremia, the hazard of peritonitis should not discourage the use of the method if all precautions are taken.

The implantation of the tubes constitutes a minimal surgical trauma, which can be performed with virtually no risk in any phase of the patient's illness. Patients in uremia commonly have ileus or other gastrointestinal disturbances. Whether the irrigation process adds to these symptoms is not certain, but the symptoms are manageable by the usually available technics.

The free exchange of water and electrolytes between the plasma and the peritoneal fluid largely eliminates the need of routine intravenous fluid therapy. It is unlikely that unrestricted water administration speeds the recovery of kidney function. If caution is not exercised in the parenteral administration of fluids during the oliguric phase, especially if acidosis is present, lethal pulmonary edema may be produced. Unless the patient can take food orally, however, supplementary glucose, amino acids and vitamins should be given parenterally.

CONCLUSION

Peritoneal irrigation, by the technic herein described, eliminated uremia following acute renal failure from parenchymatous injury caused by sulfathiazole. Recovery of sufficient renal function to prevent the recurrence of uremia took place.

330 Brookline Avenue.

9. The Treatment of Acute Renal Failure by Peritoneal Irrigation, to be published. Ann. Surg.

10. Van Slyke, D. D.; Stillman, E.; Moeller, E.; Ehrlich, W.; McIntosh, J. F.; Leiter, L.; MacKay, E. M.; Hannon, R. R.; Moore, N. S., and Johnston, C.: Observations on the Courses of Different Types of Bright's Disease and on the Resultant Changes in Renal Anatomy, Medicine **9**: 257, 1930.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

JAMES R. WILSON, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156)

H. J. Heinz Company, Pittsburgh.

HEINZ PRE-COOKED CEREAL FOOD contains toasted oat flakes, yellow corn meal, toasted wheat, durum middlings, nonfat milk solids, brown sugar, defatted wheat germ, brewers' yeast, defatted corn germ, dicalcium phosphate, calcium carbonate, fine dairy salt, sodium ferric pyrophosphate, nicotinic acid, thiamine hydrochloride and riboflavin.

Analysis (submitted by manufacturer).—Total solids 93.79%, total sugar as sucrose 9.72%, protein (N × 6.25) 14.74%, fat (by acid hydrolysis) 3.75%, crude fiber 1.59%, ash 4.90%, salt 1.15%, total carbohydrates other than crude fiber, by difference 68.81%, calcium 713 mg. per hundred grams, phosphorus 657 mg. per hundred grams, iron 38 mg. per hundred grams, copper 0.8 mg. per hundred grams.

Calories.—3.68 per gram, 104 per ounce.

Vitamins.—Thiamine	1.22	mg. per 100 grams
Riboflavin	0.88	mg. per 100 grams
Niacin	22.50	mg. per 100 grams

H. J. Heinz Company, Pittsburgh.

HEINZ STRAINED APPLE PRUNE PUDDING contains rice (Blue Rose), 50 per cent cream, cornstarch, nonfat milk solids, sugar, whole eggs, salt, vanilla concentrate tenfold, ground apples, dried prunes, lemon juice and water.

Analysis (submitted by manufacturer).—Total solids 29.66%, total sugar as sucrose 17.30%, acidity as citric 0.08%, protein (N × 6.25) 1.53%, fat (by acid hydrolysis) 1.42%, crude fiber 0.28%, ash 0.73%, salt 0.37%, total carbohydrates other than crude fiber, by difference 25.62%, calcium 40 mg. per hundred grams, phosphorus 39 mg. per hundred grams, iron 0.25 mg. per hundred grams, copper 0.11 mg. per hundred grams, lead 0.06 mg. per hundred grams, arsenic 0.007 mg. per hundred grams.

Calories.—1.21 per gram, 34 per ounce.

Vitamins.—Carotene	128	I. U. per 100 grams
Thiamine	0.019	mg. per 100 grams
Riboflavin	0.071	mg. per 100 grams
Ascorbic acid	1.38	mg. per 100 grams

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 16, 1946

SUDDEN DEATH IN STATUS LYMPHATICUS

The British investigators Greenwood and Woods [1] characterize status lymphaticus as "this heap of rubbish," stating furthermore that "the present use in certification and in evidence in coroners' courts of the phrase Status Lymphaticus and Status Thymic Lymphaticus is . . . a good example of the growth of medical mythology. A nucleus of truth is buried beneath a pile of intellectual rubbish, conjecture, bad observations, rash generalization." The British commission headed by Young and Turnbull [2] was unable to locate in status lymphaticus even a "nucleus of truth" and concluded that no such condition exists. Elsewhere status lymphaticus is regarded as a clinically recognizable entity consisting of "a combination of hereditary constitutional anomalies, entering into which are certain peculiarities of configuration, with preservation or even hyperplasia of the thymus at an age when involution is to be expected, hyperplasia of the lymphoid cells in the spleen, intestine and elsewhere, changes in the distribution of hair, hypoplasia of the vascular system, developmental deficiencies in the genitalia and, incidentally, visceral defects of uncertain occurrence and irregular distribution." [3]

In children suddenly dead with the physical attributes of status lymphaticus the lymphoid tissues in various parts of the body show myriads of necroses in the cells of the germinal follicles. These changes are believed to result in the release of sensitizing nucleoproteins. After the expiration of the anaphylactic incubation period the lymph nodes, according to this theory, are again subjected to the action of destructive substances which now serve to bring about further disintegration of nuclei, thus providing the requisite quantity of specific proteins to complete the anaphylactic cycle and to bring about sudden death.[3] Another theory of sudden death in subjects of status lymphaticus involves pressure effects. At Bellevue Hospital, where for a good many years status lymphaticus has been a subject of systematic study not only by the hospital pathologists but by medical examiners engaged in the investigation of sudden death, the anatomic signs of tracheal compression and of death from suffocation, although sought, have never been found. In the Bellevue necropsy experience the heaviest thymus encountered in status lymphaticus weighed 115 Gm., whereas the weight necessary for compressing the trachea, as shown by the experiments of Tamassia, is at least 180 Gm.

Carr [4] of the San Francisco Coroner's Office has described a series of 7 cases of status lymphaticus in which he believes that death was due to asphyxia following tracheal obstruction and displacement of the heart and lungs by the enlarged thymus gland. Perhaps the mere existence of the anatomic composite of status lymphaticus does not always satisfactorily explain the cause of sudden death.

If, as suggested by the British commission, status lymphaticus should be withdrawn from further consideration, it would exclude an apparently important antecedent of sudden death and, to this extent, progress would cease.

THERAPY OF FILARIASIS BANCROFTI

In a report on the medicinal treatment of filariasis bancrofti, Temkin [1] stresses the protean character of the earliest symptoms of filariasis and the difficulty of diagnosis, particularly in the differentiation from pseudofilariasis. Attacks of lymphedema, lymphadenitis and lymphangitis of one form or another constitute the early symptoms of filariasis in the Pacific. The recognition of the existence of "primary elephantiasis" suggests that the absence of early symptoms is no guaranty against a development of this complication. However, elephantiasis, even in native populations constantly exposed to infection, is relatively limited in incidence. Immunologic tests have not reached the stage where they could unequivocally decide the diagnosis of filiarasis. Therefore the efficacy of any drug must be judged by its effect on the disease as a whole. The bacterial theory of the disease, which denies the primary importance of filariasis, is not supported by experience from the application of sulfonamide drugs. Most authors do not regard either secondary infection or microfilariae as essential in the pathogenesis of the disease. Attention centers around the adult parasite and the body reaction to filarial infection itself. O'Connor believes that the acute inflammatory attacks represent an allergic or anaphylactic reaction, whereas

1. Greenwood, Major, and Woods, H. M.: "Status Thymicolymphaticus" Considered in the Light of Recent Work on the Thymus, J. Hyg. **26**: 305 (Aug.) 1927.

2. Young, M., and Turnbull, H. M.: Analysis of Data Collected by Status Lymphaticus Investigation Committee, J. Path. & Bact. **34**: 213 (March) 1931.

3. Symmers, Douglas: Status Lymphaticus, Am. J. Surg. **26**: 7 (Oct.) 1934.

4. Carr, J. L.: Status Thymolymphaticus, J. Pediat. **27**: 1 (July) 1945.

1. Temkin, Owsei: A Report on the Medicinal Treatment of Filariasis Bancrofti, National Research Council, Washington, D. C., September 1945.

elephantiasis is due to mechanical obstruction caused directly or indirectly by the worms or embryos. This theory presupposes the existence of hyperfilariation and the death and disintegration of large numbers of parasites at different times. O'Connor argues that antimony and arsenicals administered intravenously are ineffective because the parasites are not in the blood stream and, if degenerating, are largely cut off from circulation. The symptoms of early filariasis are partly allergic and partly due to inflammatory reactions caused by the adult worm. It is not possible to tell whether dead or living worms are preponderantly responsible for the pathologic changes.

Filariasis has a relatively good prognosis if reinfection is prevented and the patient is put under favorable clinical, physical and psychologic conditions. A majority of investigators aimed at the destruction of the living adult worms. The effectiveness of the drugs was tested on parasites in vitro, on related filarial infection in animals, on clinical symptoms and on microfilariae in the blood of man. Animal experiments were made on naturally occurring infections in dogs with Dirofilaria immitis and on Florida cotton rats infected with Litomosoides carinii. Culbertson and Rose obtained rather encouraging results with neostam and neostibosan in animal experiments. The adult worms appeared more susceptible to the action of these drugs than were the microfilariae. The latter disappeared gradually in the course of the treatment, but the adult worms were usually dead two weeks from the beginning of the treatment. In 1940 patients with filariae were given fuadin, anthiomaline, antimony, neoarsphenamine, acetylarsan, espundal, arsant, emetine, sulfanilamide, 4:4-diaminodiphenyl-sulphone, glucoside by Hawking. No filaricidal action could be demonstrated, judging by the persistence of microfilariae in the blood stream.

Hawking thought it possible that a drug might kill the adult worms without at the same time damaging the microfilariae. Culbertson and his associates administered neostibosan intravenously to 30 native Puerto Ricans infected with Wuchereria bancrofti. With the exception of 1 patient suffering from periodic chyluria, all were rendered symptom free. The treatment lasted from thirty-three to forty-eight days. Of the 30 patients treated, 13 had lost all microfilariae twelve months after the end of the treatment, and 5 had lost between 87 and 99 per cent of the microfilariae. In the remaining 12 patients the microfilariae had declined from 4 to 74 per cent after nine months of observation. In a control group of 15 patients, 3 showed increases from 3 to 1,200 per cent during fourteen months of observation. When the actual course of treatment had ended, the microfilaria levels of the patient showed little or no change. The microfilaria levels were maintained or continued to decline for twelve months after the end of the treatment. The authors suggest that this slow action may be attributable to a direct action of neostibosan on the adult parasites rather than on the microfilariae.

The experience with various chemotherapeutic agents indicates that antimony compounds still hold the highest promise of all the drugs tried.

THE LIVER AND SHOCK

Shock may arise following a variety of clinical accidents. This divergence of initiating factors has given rise to a number of theories regarding the fundamental cause of shock. Some attribute the situation to toxic substances produced by tissues injured mechanically or through hypoxia; a good case can be made for a strictly neurogenic origin of the shock syndrome; drastic alteration in the usual pattern of hemodynamics is considered a reasonable basis for the development of shock. A more recent tendency, stimulated by studies in connection with the war, has been to link the causes of the recognized changes in intermediary metabolism in shock with the origin of this syndrome. In this connection the liver has been implicated in the cause of shock.

Shock produced in experimental animals is followed by a definite delay in regeneration of serum protein,[1] an observation which raises the question of the place of the liver in the development of the shock syndrome. In the shock produced by restriction of blood flow to an extremity, hepatic glycogen decreases considerably and its synthesis from administered glucose is greatly delayed.[2] Furthermore, the observation that increased levels of lactic and pyruvic acid can be demonstrated in the blood in hemorrhagic shock,[3] calls attention again to the liver in this abnormal state. Whereas the liver ordinarily has a large capacity for the metabolic transformation of amino acids, Engel and his co-workers[4] have shown that a well defined rise in the concentration of amino acids occurs in the blood of animals in shock as a result of hemorrhage and that the rate of urea formation from amino acids is also depressed. It has been suggested that the loss of potassium from body cells may be the "toxic factor" in shock.[5] Recently Darrow and Engel[6] have investigated the shifts of electrolytes and water between cells and extracellular fluids in the liver following hemorrhagic shock. It appears that an early result of the loss of blood is a shift of water from the hepatic cells to the extracellular spaces and a concomitant loss of potassium from the cells. During recovery there is a tendency to replace the lost potassium, but complete restoration of the composition of the liver is not observed.

1. Ehert, R. V.; Stead, E. A., Jr.; Warren, J. V., and Watts, W. E.: Am. J. Physiol. **136:** 299 (April) 1942.
2. Haist, R. E., and Hamilton, J. L.: J. Physiol. **102:** 471 (April 4) 1944.
3. Russell, J. A.; Long, C. N. H., and Engel, F. L.: J. Exper. Med. **79:** 1 (Jan.) 1944.
4. Engel, F. L.; Winton, Mary G., and Long, C. N. H.: J. Exper. Med. **77:** 397 (May) 1943. Engel, F. L., and Engel, M. G.: Com. on Med. Pres., O. S. R. D., Rep. 69, December 1945, p. 746.
5. Zwemer, R. L., and Scudder, John: J. Surg. **4:** 510 (Oct.) 1938.
6. Darrow, D. C., and Engel, F. L.: Am. J. Physiol. **145:** 32, (Nov.) 1945.

The foregoing experimental evidence appears to implicate the liver in the development of shock. However, the Yale investigators [6] believe that this organ is readily influenced by hypoxia and that the improvement in circulation and the consequent restoration of the supply of oxygen will restore normal hepatic function. The liver is involved in so much of the metabolic picture of the body that it is not unexpected to find that these chemical transformations are changed in shock. Any claim that the liver bears a primary causative relation to this condition would seem to require further demonstration.

Current Comment

MILITARY DEATHS IN WORLD WAR II

The exact number of military deaths in World War II probably never will be known accurately. Indications are that they exceed those in World War I, which are estimated at about 8,000,000. According to a recent discussion of this subject,[1] the combat loss of belligerents in World War II was from 9,500,000 to 10,000,000. The losses of the Axis powers have been estimated at about 5,200,000, of which number Germany contributed 3,250,000, Japan 1,500,000 and Italy 150,000 to 200,000. The complete death losses of the United Nations are estimated in the neighborhood of 4,500,000, of which approximately 3,000,000 were Russian and about 400,000 British Empire deaths. Of the British Empire losses, about 250,000 were residents of the United Kingdom. The final total of United States losses on all fronts in World War II is not yet completed but is probably close to 325,000. Even though the compilations are incomplete and inaccurate, World War II was by far the most destructive in human history in terms of loss of life as well as in many other respects.

INSECT CONTROL

The Coordination Center of the Insect Control Committee, National Research Council, has prepared an Abstract Bulletin to provide abstracts of "open" reports on insect and rodent control. Several issues will be prepared. The reports were received from government agencies, the armed forces, universities and other sources. Inquiries may be addressed to the Coordination Center, National Research Council, Insect Control Committee, 2101 Constitution Avenue, Washington 25, D. C. The contents in the first issue are grouped under biology, chemistry, dispersal, entomology, rodent control and general. For security and other reasons little of this information was disseminated during the war. With the end of war, security restrictions have been removed but lack of journal space may delay publication of many of the more important articles. This bulletin provides a real service by making the information available as soon as possible.

1. Military Deaths in World War II, Statistical Bulletin, Metropolitan Life Insurance Company, January 1946.

HODGKIN'S DISEASE AND GIANT FOLLICULAR LYMPHADENOPATHY

A disease which simulates Hodgkin's granuloma and which, unlike it, is susceptible of cure is the comparatively newly discovered giant follicular lymphadenopathy, known also as giant follicle hyperplasia of lymph nodes and spleen and giant follicular lymphoma. This disease is characterized by enlargement of lymph nodes in various parts of the body, usually most noticeable in the superficial areas, and by splenomegaly, the enlargements in both places being due to dimensional and numerical hyperplasia of lymph follicles. Histologically, giant follicular lymphadenopathy is strikingly different from Hodgkin's disease; the microscopic distinction may be made at a glance. It differs also from Hodgkin's disease in that it is curable by mild x-ray therapy, whereas Hodgkin's disease is not amenable to any method of treatment at present known. At the moment it appears that giant follicular lymphadenopathy is well recognized by pathologists, but there are clinicians who seem never to have heard of it. Symmers [1] and Morehead and Woodruff [2] have recently shown that there is a lesion of the lymph follicles of the appendix in which the microscopic changes are identical with those of giant follicular lymphadenopathy or of giant follicular lymphadenopathy with rupture and transformation of the hyperplastic follicles into so-called polymorphous cell sarcoma, giving rise in either event to the symptoms of appendicitis.

ADRENAL HYPERTENSION

The possibility that adrenal ischemia may cause arterial hypertension was tested recently by Victor[1] and his associates of the Goldwater Memorial Hospital, Columbia University. The left adrenal glands of 6 dogs were exposed, and many of the arterioles entering the gland from the pericapsular fat and connective tissue were ligated. One ligature was placed about the vascular fat and connective tissue containing the hilar artery and vein, and a second ligature about the grossly visible arteries and veins entering either the superior or the inferior pole. Systolic and diastolic blood pressures were recorded daily before and after the operation. Before the operation the average systolic pressure was in the neighborhood of 125 mm. of mercury for all dogs. Within two weeks after the operation the average was as high as 225. There was a slight subsequent rise in systolic pressure, the pressure going as high as 280 in 1 dog. In all dogs the elevated blood pressure has persisted till the present time (seven months after the first operation). Chemical and microscopic studies are not yet completed. Evidently, however, in dogs unilateral suprarenal ischemia due to subtotal ligation of periadrenal blood vessels causes a prompt and sustained hypertension, comparable with the hypertension produced by experimental renal ischemia (Goldblatt clamps).

1. Symmers, Douglas: Clinical Significance of Deeper Anatomic Changes in Lymphoid Diseases, Arch. Int. Med. **74**: 163 (Sept.) 1944.
2. Morehead, R. P., and Woodruff, W. E.: Solitary Giant Follicular Lymphoma of the Vermiform Appendix, Arch. Path. **40**: 51 (July) 1945.
1. Victor, Joseph: Proc. Soc. Exper. Biol. & Med. **60**: 332 (Dec.) 1945.

NATIONAL HEALTH PROGRAM OF THE AMERICAN MEDICAL ASSOCIATION

Adopted by the Board of Trustees and the Council on Medical Service, Feb. 14, 1946

1. The American Medical Association urges a MINIMUM STANDARD OF NUTRITION, HOUSING, CLOTHING AND RECREATION as fundamental to good health and as an objective to be achieved in any suitable health program. The responsibility for attainment of this standard should be placed as far as possible on the individual, but the application of community effort, compatible with the maintenance of free enterprise, should be encouraged with governmental aid where needed.

2. The provision of PREVENTIVE MEDICAL SERVICES through professionally competent health departments with sufficient staff and equipment to meet community needs is recognized as essential in a health program. The principle of federal aid through provision of funds or personnel is recognized with the understanding that local areas shall control their own agencies as has been established in the field of education. Health departments should not assume the care of the sick as a function, since administration of medical care under such auspices tends to a deterioration in the quality of the service rendered. Medical care to those unable to provide for themselves is best administered by local and private agencies with the aid of public funds when needed. This program for national health should include the administration of MEDICAL CARE, INCLUDING HOSPITALIZATION TO ALL THOSE NEEDING IT BUT UNABLE TO PAY, such medical care to be provided preferably by a physician of the patient's choice with funds provided by local agencies with the assistance of federal funds when necessary.

3. The procedures established by modern medicine for advice to the prospective mother and for ADEQUATE CARE IN CHILDBIRTH should be made available to all at a price that they can afford to pay. When local funds are lacking for the care of those unable to pay, federal aid should be supplied with the funds administered through local or state agencies.

4. The child should have throughout infancy PROPER ATTENTION, INCLUDING SCIENTIFIC NUTRITION, IMMUNIZATION AGAINST PREVENTABLE DISEASE AND OTHER SERVICES INCLUDED IN INFANT WELFARE. Such services are best supplied by personal contact between the mother and the individual physician but may be provided through child care and infant welfare stations administered under local auspices with support by tax funds whenever the need can be shown.

5. The provision of HEALTH AND DIAGNOSTIC CENTERS AND HOSPITALS necessary to community needs is an essential of good medical care. Such facilities are preferably supplied by local agencies, including the community, church and trade agencies which have been responsible for the fine development of facilities for medical care in most American communities up to this time. Where such facilities are unavailable and cannot be supplied through local or state agencies, the federal government may aid, preferably under a plan which requires that the need be shown and that the community prove its ability to maintain such institutions once they are established (Hill-Burton bill).

6. A program for medical care within the American system of individual initiative and freedom of enterprise includes the establishment of VOLUNTARY NONPROFIT PREPAYMENT PLANS FOR THE COSTS OF HOSPITALIZATION (such as the Blue Cross plans) and VOLUNTARY NONPROFIT PREPAYMENT PLANS FOR MEDICAL CARE (such as those developed by many state and county medical societies). The principles of such insurance contracts should be acceptable to the Council on Medical Service of the American Medical Association and to the authoritative bodies of state medical associations. The evolution of voluntary prepayment insurance against the costs of sickness admits also the utilization of private sickness insurance plans which comply with state regulatory statutes and meet the standards of the Council on Medical Service of the American Medical Association.

7. A program for national health should include the administration of MEDICAL CARE, INCLUDING HOSPITALIZATION, TO ALL VETERANS, such medical care to be provided preferably by a physician of the veteran's choice, with payment by the Veterans Administration through a plan mutually agreed on between the state medical association and the Veterans Administration.

8. RESEARCH FOR THE ADVANCEMENT OF MEDICAL SCIENCE is fundamental in any national health program. The inclusion of medical research in a National Science Foundation, such as proposed in pending federal legislation, is endorsed.

9. The services rendered by VOLUNTEER PHILANTHROPIC HEALTH AGENCIES such as the American Cancer Society, the National Tuberculosis Association, the National Foundation for Infantile Paralysis, Inc., and by philanthropic agencies such as the Commonwealth Fund and the Rockefeller Foundation and similar bodies have been of vast benefit to the American people and are a natural outgrowth of the system of free enterprise and democracy that prevail in the United States. Their participation in a national health program should be encouraged, and the growth of such agencies when properly administered should be commended.

10. Fundamental to the promotion of the public health and alleviation of illness are WIDESPREAD EDUCATION IN THE FIELD OF HEALTH and the widest possible dissemination of information regarding the prevention of disease and its treatment by authoritative agencies. Health education should be considered a necessary function of all departments of public health, medical associations and school authorities.

MEDICINE AND THE WAR

VETERANS

VETERANS ADMINISTRATION RECRUITMENT OF PHYSICIANS

The enactment of Public 293, which created the new Department of Medicine and Surgery of the Veterans Administration, has proved most helpful in the procurement of physicians, dentists and nurses. In the first six weeks of the operation of this law 797 new physicians have accepted appointment.

Of the newly appointed physicians, 57 are specialists certified by one or another of the approved examining boards. These include:

American Board of	Internal Medicine	17
	Neuropsychiatry	16
	Radiology	6
	Otolaryngology	5
	Surgery	4
	Pathology	4
	Ophthalmology	2
	Urology	2
	Gynecology and Obstetrics	1

It is most encouraging that the proportion of applications from certified specialists is constantly increasing. The professional opportunities offered in the remodeled medical service of the Veterans Administration are attracting a very high quality of medical talent.

Approximately 150 residents are now in training, and this number will be more than doubled before this issue of THE JOURNAL goes to press. The Veterans Administration hopes to have 750 residents in training within four months. All residencies will have the approval of the specialty boards before being offered.

There are still vacancies in the Department of Medicine and Surgery of the Veterans Administration. Applications are welcomed from two classes of physicians—those who are already well trained and well qualified, and those who desire to become well trained and well qualified. Great opportunities for teaching and research are offered the former group; and unexcelled opportunities for graduate training are offered the latter.

MARQUETTE UNIVERSITY PHYSICIANS TO TAKE CHARGE OF VETERANS HOSPITAL AT WOOD, WIS.

The Veterans' Hospital at Wood, Wis., recently became a university hospital of Marquette University School of Medicine, Milwaukee, after a conference of Veterans Administration heads with a committee headed by Dr. Eben J. Carey, dean of the school. Under the plan, physicians now at Veterans' Hospital will continue in administrative positions, and specialists from Marquette University School of Medicine will be in full charge of the medical care of veterans.

Taking part in the conference was Major Paul B. Magnuson, former professor of surgery at Northwestern University Medical School, Chicago, new chief of research for the Veterans Administration, Washington, D. C.; Lieut. Col. Lyle Baker, medical chief of staff at Hines Veterans' Hospital, Maywood, Ill., and Lieut. Col. Glenn Mullins, chief medical officer of the hospital at Wood.

The committee consists of Dr. Fred Madison, who will be in charge of medicine; Dr. Carl W. Eberbach, surgery; Dr. Henry Olsen, obstetrics and gynecology, for women veterans; Dr. Herman Schumm, orthopedics; Dr. John Garvey, neuropsychiatry, and Dr. Leander Van Hecke, pathology. The consultants will serve half of each day at salaries up to $6,000. Consultants and residents will be appointed by the dean's committee with approval of the Washington office of the Veterans Administration.

MISCELLANEOUS

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

CALIFORNIA

San Diego County General Hospital, San Diego. Capacity, 727; admissions, 6,304. Dr. H. M. Fine, Superintendent (resident—tuberculosis, discharged medical officer, May 15).

CONNECTICUT

Bristol Hospital, Bristol. Capacity, 189; admissions, 4,414. Miss F. L. Sanborn, R.N., Superintendent (resident—mixed service).

INDIANA

Clinic Hospital, Bluffton. Capacity, 51; admissions, 2,058. Dr. Harold D. Caylor (resident—mixed service).

Ball Memorial Hospital, Muncie. Capacity, 247; admissions, 6,890. Miss Nellie G. Brown, R.N., Superintendent (interns, July 1).

MINNESOTA

St. Luke's Hospital, Duluth. Capacity, 270; admissions, 8,995. Mr. James McNee, Superintendent (resident—pathology).

NEBRASKA

Lincoln General Hospital, Lincoln. Capacity, 223; admissions, 5,649. Mr. Robert B. Witham, Administrator (3 interns, 1 male, 2 female; resident—mixed service).

NEW YORK

Goldwater Memorial Hospital, New York City. Capacity, 1,660; admissions, 1,505. Dr. C. G. Scherf, Superintendent (2 residents—pathology, discharged medical officers, July 1).

OHIO

Glenville Hospital, Cleveland. Capacity, 135; admissions, 3,380. Mr. Arthur B. Harris, Superintendent (resident—mixed service, July 1).

St. Elizabeth Hospital, Dayton. Capacity, 375; admissions, 9,126. Sister Devota, Administrator (intern, residents—mixed service).

UNRRA NEWS

Artificial Limb Program in Liberated Countries

The United States Relief and Rehabilitation Administration, Washington, D. C., recently announced that thousands of persons in Europe and Asia who lost arms or legs as a result of the war will receive artificial limbs as a result of arrangements completed between UNRRA and the governments of five countries. Under the arrangements the governments of these countries will set up plants to manufacture the limbs under government ownership and operation. UNRRA will supply necessary component parts of machinery and equipment which must be obtained in the United States, and also some of the materials for the limbs, at least at the start of the operation. UNRRA also will arrange for training workers in the government owned plants.

The governments which already have asked UNRRA to aid in establishing their factories are those of Greece, Yugoslavia, the Ukraine, Byelorussia and Poland. The Chinese government probably will make a similar arrangement.

In addition, as part of its medical program UNRRA will provide emergency supplies of limbs manufactured in this country to persons in Greece before the Greek government can set up its plant.

ASSIGNED TO SURGICAL CONSULTANTS DIVISION

Lieut. Col. Oscar P. Hampton Jr., University City, Mo., was recently assigned to the Surgical Consultants Division, Orthopedics Branch, Office of the Surgeon General. Dr. Hampton was recently awarded the Legion of Merit (THE JOURNAL, January 26, p. 219).

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Brown, Alexander J., Capt., 100 Beverly Ct., Mobile.
Crutcher, John S. Jr., Col., 200 N. Madison St., Athens.
Davis, John W. Jr., Major, 220 Wellington Road, Montgomery.
Irwin, Winston H., Major, 2505 16th Ave., North Birmingham.
Jackson, James T., Maj., 218 Ponce de Leon Ave., Montgomery.
Johnston, William L., Capt., 2116 11th Avenue, S., Birmingham.
Kincannon, Leroy T., Major, 2926 Canterbury Rd., Birmingham.
Oliver, Ernest B., Lt. Col., 3245 Carlisle Rd., Birmingham.
Owens, Arthur H. Jr., 1st Lt., Ashland.

Arizona

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ORGANIZATION SECTION

ANNUAL CONFERENCE OF SECRETARIES AND EDITORS OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

DR. CREIGHTON BARKER, New Haven, Conn., Presiding

(Continued from page 652)

FRIDAY, FEBRUARY 8—AFTERNOON

State Plans for Aid to Returning Medical Veterans

MAJOR GENERAL GEORGE F. LULL, Associate General Manager, American Medical Association: I should like to read you a letter received here at headquarters. This letter is typical of many we receive from men in the service and from veterans. This is a little stronger, probably, than the average, but some of the letters are even stronger than this. This was written to the Editor of THE JOURNAL:

"We would like to know what the American Medical Association is doing for us who have risked our lives a thousand times that the rest of you might be smug and secure.

"I personally was with the famous 100th First Airborne Division for over two years, and as a qualified glider combat infantry physician I am lucky to be alive and not disabled.

"Most of my medical friends, many younger than myself, who played up trivial disabilities to dodge their responsibilities during the national emergency, have made enough money during our absence to retire or take it easy for the rest of their lives with the cream of the practice.

"What have they done for us besides pat us on the back, congratulate us on returning home alive and well? Nothing! What have the local, state and national medical societies done for us? We don't expect monetary returns, and although they inveigled us into the service with promises of an endowment system of some sort which would compensate us for our loss, no promises were kept. However, this was too much to expect of selfish human motives.

"Once and for all the barriers must be lifted if justice is to be done, and we know your medical trust has exerted powerful influence against us. Reconsider our case, or ten thousand of us shall fight you in federal courts with the last dime and breath we possess. There is no need for your dictatorial censorship. That is what we fought for and shall continue to fight for to our dying day!"

That is a letter received from a man who is angry, and he is going to take it out on somebody. While he is in the Army he thinks the Surgeon General and the American Medical Association are to blame; the nearer he comes to getting out the more blame he pushes on the American Medical Association. Neither of them in ninety-nine cases out of a hundred had anything to do with his particular situation.

One of the problems organized medicine has to face at present is this returning medical veteran. This problem faces our societies at the county, state and national levels. It is at the lower levels, however, where the greatest aid can be given to these men who left their practices to enter service in the armed forces.

Lack of housing, of suitable office space, and the inability to secure equipment, automobiles and clothing are problems that arise in many communities. I am a victim of that myself; my prewar clothes are such that they don't fit in certain places, and buying a suit of clothes now is just like when we used to buy a gallon of moonshine in the prohibition days: You have to have a friend who knows a fellow who has a suit, and in that way you get one. Housing is about as bad.

The inability to secure housing and office space is much greater in the urban than in the rural communities. It is up to medical organizations to aid these men. Many of these veterans gripe about having been forgotten men by their county, state and national organizations. This is not universal, however, and in many cases could not have been completely avoided. The time to render them service that would be appreciated is immediately on their return.

The American Medical Association established a Bureau of Information in September 1944. Its function in brief is as follows:

Medical officers contacting the Bureau for information regarding opportunities in certain states are furnished with complete listings of the areas in the states where there is need for a physician. Summary sheets giving the medical facilities and the physician aspects of the country are available for a particular area in which the doctor may be interested. For further information regarding the establishment of a practice in a certain area he is referred to the secretaries of the state and county medical societies. Specific inquiries regarding postwar education are referred to the Council on Medical Education and Hospitals, where a survey is made every six weeks to ascertain the number of vacancies available in approved hospitals for returning medical officers.

The Council is also continuing its efforts to establish additional high grade residency programs in hospitals that have not yet developed their educational services to the fullest capacity. All requests for information regarding medical education, licensure, relocation and benefits available to medical officers under the G. I. Bill of Rights are referred either to the Bureau of Legal Medicine and Legislation or to the Council on Medical Education and Hospitals. The same procedure is followed in interviews with the returning veterans who have visited headquarters in person.

All inquiries receive careful attention, and every effort is made to supply complete information to all medical officers. Since V-J day the Bureau of Information here has received each week about 565 letters from medical officers, and a weekly average of 110 physicians have come to the office for specific information in their adjustment to civil life.

In order to give this service to the returning veteran we must rely on the state and county societies to give us accurate statistics covering the medical facilities of every community. We must at all times, through the cooperation of the state and county medical societies, have a picture of the medical personnel in their areas and of the present and future needs for the adequate medical care of the community.

There is considerable difference between what happens at the state or the county level and what happens here in headquarters. As a rule the man who comes here is a man looking for a location or a residency or further education, and he has not decided himself just where he will settle or where he would like to settle. He is open minded about it. The man who comes to you has narrowed it down to the state level, and, as he goes on down the line, to the county level.

Under date of Jan. 3, 1946 the Bureau of Information requested all state medical societies to furnish them with detailed information as to their plans and those of their constituent societies for the returning veterans. To date twenty-seven societies out of the forty-nine have replied. These replies indicated the vast difference in the problems in different geographic areas; for instance, one Western state replied "The majority of the fifty-three physicians who left practice in ..... State to enter the armed forces have by this time returned to their respective communities and again have taken up where they left off."

It would be foolish for that state to establish a big office or to publish bulletins of information, because there is no need of it. This is the exception, however, rather than the rule.

The problems in the various states vary greatly, owing to the distribution of population largely and to the requirements in the specific state. Some states reported that they have taken no steps to aid the returning physician. We discounted this as we know that if the returning physician goes to state headquarters or to the state secretary he will be given advice and all the information possible. Usually in those states the secretary has all the information at hand. He does not have

to depend so much on the county societies. Although some of these states may be geographically large, the population is usually low.

I have selected a few replies and will quote them as examples. Many of the aids being cited in the examples quoted have also been extended to veterans by other state and county medical societies and are not original by any means, but they give a good cross section of the action taken.

The District of Columbia Medical Society was taken as an example of one whose membership comes from an entirely urban population, with no problems common to rural areas. I quote extensively from the secretary's report:

"We are endeavoring to obtain office space for physician veterans by every possible method. We have directed letters to the Board of Trade, the Real Estate Board, the Public Buildings Administration. We have conferred with owners of buildings and real estate men. We have issued statements to the press. The results have been fair. We did locate one six-story building which is being converted by the owner into a professional building.

"There are other prospects in the offing, but the situation generally is not good. We are seeking priorities for doctors, especially for automobiles. Wires have been sent to all automobile distributors in Washington requesting their cooperation. The response to date has been good. We bring the veterans up to date on new laws relative to licenses, narcotics and so on. We have published the return of service physicians in the newspapers. A list of them was published in the Washington *Post* a short time ago. Several veterans called on us stating that they had received calls thereafter.

"We give the veteran a six month subscription to our telephone exchange, the Medical Bureau. When we receive calls from patients who do not have a family doctor, they are shown preference. We have complete data on postgraduate courses offered by local medical schools, as well as pamphlets on postgraduate courses in other schools throughout the country. These are provided veterans on request.

"In addition to the foregoing, the secretary personally counsels with veterans when they come home and come into the office. The secretary of the society has corresponded with its members during the war by sending them news letters at least every sixty days. As they are all located so close to the society's office, that is, in peacetime, most of them come to see the secretary on their return from service.

"I believe that one of the best things that can be done for returning medical veterans is to discuss in person their problems and give them advice. In this way, rather than by means of letters and bulletins which are valuable in themselves, it gives a personal touch, and the man is more appreciative of what is being done for him than if he simply reads it in a bulletin."

As an example of a state with many problems involving rural practice, I have selected the report from the secretary of Oklahoma. "The Oklahoma State Medical Association," quoting from his report, "has completed a comprehensive survey of the medical needs of the state, which was made by component county societies. They also have published a year book which gives the new doctor facts about the practice of medicine in the state and brings the returning practitioner up to date.

"Oklahoma has mailed to all service men of the state a letter telling them of the services available in the headquarters office should they desire to avail themselves of it. The office also acts as a clearing house for information concerning postgraduate and refresher training at the state university and medical schools located outside of the state. Several county medical societies have likewise set up committees to assist in the securing of office space and loan funds should veterans need ready cash. One county medical society has raised sufficient funds to guarantee office rent and equipment for its members if needed.

"The state medical society is sponsoring a continuing course in surgical diagnosis which all military officers on active duty and in government installations of the state are able to attend free. These courses are particularly well adapted to the returning veteran."

The secretary modestly added at the end "Obviously the foregoing is no greater nor lesser than all other state medical associations are doing" and calls attention to the fact that they operate largely on the basis of a rural area.

It was impossible to tabulate definitely just what each state was doing. However, some of the aids that have been extended varied from a remark submitted by one state, "We have no organization or definite program," to rather extensive and detailed programs submitted by other states. Obviously the report received from the state that had no definite program did not mean that the veterans would be given a cold shoulder should they ask for guidance or aid. It simply meant there was nothing organized and that the veteran would have to seek for himself.

Seven of the states replied that, although they were helping the veteran, they had no organized program. Several more stated that they extended a letter of welcome to the returning veterans as soon as they found out they were back. Ten of the states stressed the personal contact I have mentioned previously, and certain states have waived the dues for veterans for the first year after they return. Quite a few states have raised loan funds which are readily obtainable by the veteran. One county medical society sent in a copy of a large advertisement which had been placed in the county newspapers, giving the names of the returning service men in the county and those still in the service and advising patients to return to them when they needed medical care provided the specific doctor had opened his office.

Many county medical societies have Welcome Home dinners for returning veterans. Mention was made of the fact that in some places physicians had leased doctors' offices. These men in some places were being asked to vacate when the doctor returned and desired his office back. In many states the state medical associations' headquarters acted as a clearing house in most states for all medical information and got in touch with the veterans in many cases by phone, letters or by wire upon their return.

Out of the twenty-seven replies received, twenty showed that a definite, active program was being carried out at the state and county levels, and I have no doubt that active programs are being carried out in many of the states from which no replies have been received.

Returning veterans are going to play an active part in organized medicine in the future. They have been in close contact with doctors from all parts of the country, in hospitals and camps. They have discussed with one another the various problems of organized medicine, and many of them have definite ideas as to what should and what should not be done.

We have received in the headquarters office quite a number of letters from men in the service who complain bitterly about what they have heard from men who have been separated and returned to practice. They resented the fact that some of the men considered nonessential in the community, and not available for military service, were now reaping the benefits of huge practices. From the tone of these letters these men have no grudge against the older men or against the men who had to remain at home on account of their essentiality. They complain, however, that there were some men who remained at home because of alleged essentiality. This of course is a matter of opinion only, but I know they have definite views on this subject and will express themselves vocally on their return.

I should like to call attention to one thing I have heard rumors about—not only rumors but talk—and that is in certain localities county societies are refusing memberships to doctors who come into the county—a flat refusal. Any doctor going into the county is refused membership in the county society. The one county I have in mind in particular was probably the most vocal county during the war, demanding that doctors be not taken, and that all residents in the county be deferred and every other man who was selected be deferred. Now I understand no one who was not there during the war or prior to the war will be allowed to join the county society. That is the story I have heard.

No doubt there is going to be quite a shift of physicians in the United States. This occurred after the last war and

included all age groups. Many doctors make contacts in the Army which lead to partnership or membership in groups in places other than where they practiced prior to the war. A great load has been thrust on our hospitals and teaching institutions on account of the large number of veterans who desire either refresher courses or further training in some specialty. This will continue for several years, as many of them want two or three year courses, and the young men who entered the services during the last year or two have for the most part only a nine months internship. The bulk of these men will desire further training when they are released. The hospitals and colleges have done an excellent job in trying to absorb this huge load.

In closing I would like to say that any assistance you can render the veteran will repay your organization many times, as it starts the man out with a feeling of friendship and appreciation. This normally should be followed by an active interest in the organization.

DISCUSSION

DR. VICTOR JOHNSON, Chicago: We have realized since the beginning of the war the responsibility that faces the Council on Medical Education and Hospitals in providing additional facilities for medical officers, particularly residencies. We sought to obtain as much sound information as we could so that we could employ the term "estimation" instead of "guessing," but much of it nevertheless was guessing. We tried to find out what medical officers would want in the way of additional training through questionnaires distributed to all the men in the armed forces, to some 63,000 of them. We obtained replies from 21,000 and we knew thereby, relatively objectively, what these 21,000 men said they wanted at the time they said it. There remained the guesswork of two kinds, How many men who said they wanted training would, on return, decide that after all they did not want it? Secondly, What about the 40,000-odd men who failed to reply to these questionnaires? What would they want? There is no way statistically, I am told by people who conduct polls, to make a reasonably good estimate on matters of that kind. We did the best guessing we could and arrived at the conclusion that about twice as many residency places would meet the probable needs as we had in the prewar days. A second guess had to be made, namely, When would the war end, particularly how long would be the period of time between V-E day and V-J day? We asked General Lull and other important persons who were well qualified to guess, and we arrived at this tentative estimate that perhaps around two years after V-E day we might expect that most of our medical officers would be discharged. We know now that in less than a year after V-E day most of the medical officers will be discharged. None of us regrets the rapid termination of the Asiatic phase, but it has made some of our estimates look much more like guesses.

Because of this rapid discharge of medical officers now, we have had to devise a number of procedures relatively quickly. Some of these have been mentioned. We have worked with the Procurement and Assignment Service and helped to induce them not to count veteran physicians on hospital quotas. A hospital with a quota of ten house officers could add five veterans without being penalized by the Procurement and Assignment Service. Furthermore, we have urged the discontinuation of the 9-9-9 program to the Procurement and Assignment Service, and that will be discontinued this spring. That is important because it means, as far as the veterans are concerned, that none of the recent graduates will be permitted more than a year of internship, none of the recent graduates therefore will occupy places which veterans might occupy, and consequently there will be freed around April 1 approximately 2,000 residencies for returning medical officers; there will be no more quotas at all after April 1. Also we have been working with the specialty boards on the temporary approval of residencies. In peacetime it took a long time to get a residency approved. The hospital would apply. When our inspector happened to be in that region of the country he would inspect the hospital. At the next meeting of the Council the application would be considered; it would then be referred to the specialty board, and at its next meeting it would be considered. Perhaps six or eight months, even a year, would elapse between application and final approval. That was all right in peacetime, but it is unsatisfactory at present. We are working with the boards on a scheme for temporary approval of hospitals which should reduce the time between application and final approval on a temporary basis to something like two weeks instead of several weeks or several months. Three of the specialty boards have already agreed to this plan, and we expect that most if not all the others will join us also.

Assistance will be given in meeting the needs of the returning medical officers in the training programs being developed, and in some cases under operation in the Army and in the Navy and the Veterans Administration hospitals. As a result of these efforts we feel that there will be available by April 1 four to five thousand residencies for returning medical officers. This was about the number we thought we would need provided demobilization extended over a two year period. This number many thought would meet the needs of all the officers who are desirous of training, but even if we knew the war would terminate as rapidly as it did, even if we knew that, I doubt whether we could expand our residency facilities beyond the present expansion or beyond the expansion as of April 1, 1946 without some diluting of the services, so that in the end we would have a net loss rather than a gain in medical education at that level. "Do we need as many specialists as it apparently seems we are going to have if the veterans get their way?" We have gone on the assumption that we ought to expand these educational facilities as fully as we can without diluting them to meet the needs of as many qualified veterans as possible. We do not look on this expansion program as an emergency affair entirely. We feel that in many ways our educational program has been greatly improved by this stimulus, because more and more hospitals are collaborating with one another in their residency programs; more and more hospitals are collaborating or associating themselves with medical schools in carrying out this program. I feel that there will result a stronger residency program after the war than we had before the war and that we shall have additional places available after the war, used now by veterans but available shortly to our Latin American colleagues, for example, who will be coming to this country in greatly increasing numbers for advance medical training.

SURPLUS PROPERTY

MR. ROBERT C. AYERS, Director of the War Property Distribution of the Federal Security Administration: When the Surplus Property Act was passed, it was passed before V-E day. It has not been amended since that time. It has been implemented both pro and con by regulations. It has gone through three changes of administration. Section 13 of the act provides that surplus property, useful for education and health, shall be sold or leased to education and health institutions and that in fixing the sale or lease price the benefit that has accrued to the United States or which will accrue to the United States may be taken into consideration. On Nov. 6, 1945 regulation 14 was passed to implement section 13 of the act. Mr. Symington, who was then the surplus property administrator, picked the Federal Security Agency as the certifying agency for health, education and welfare institutions and also fixed a 40 per cent discount from fair value as the purchase price of material for those two types of institutions. On the welfare side, then, they still buy at fair value. Today there are four categories of priorities within that act. The first and the top priority on all types of property is the federal government itself. The second priority goes to the state and local government; the third priority goes to veterans, and the fourth priority goes to nonprofit institutions. The returning veteran does not have at the present time much of a break as far as surplus property is concerned. He comes in now under the third priority. Almost everything up to now is what is termed in short supply. While the Army says that the floodgates of surplus property are now open and that the flow of it is going forward, experience teaches and shows us that when the federal government has satisfied its needs, and when the state and local governments have satisfied their needs, the veteran takes just about what is left over. There is at this time pending in the Congress of the United States a bill to make veterans the second priority, subject only to the federal government. While I am no forecaster

at all of what Congress will do, my guess is that it will pass and make the veteran the No. 2 priority.

I suppose the reason the Federal Security Agency was asked to assume the responsibility of certifications on health, education and welfare institutions is that within the Federal Security Agency there are three constituent units: the U. S. Public Health Service, the United States Office of Education and the Social Security Board, which deal directly with the state departments of public welfare throughout the length and breadth of the nation. Therefore we have set up within the Public Health Service the Division of Surplus Property Utilization, and within the Office of Education a similar division, and within the Social Security Board a similar division. At the outset there was a Surplus Property Board, and the Department of Commerce was the main disposal agency; that lasted but a short time. Congress amended the act and made a single administrator, and then the Department of Commerce got tired of being the disposal agency and it was transferred to the Reconstruction Finance Corporation. Then Mr. Symington resigned and became an Undersecretary of War, and the RFC got tired of being a disposal agency; so the War Assets Corporation was formed, and there came into full bloom on February 1 a single agency, so to speak. General Gregory was appointed the chairman of the board of the War Assets Corporation and also the acting administrator of surplus property. At the same time the President by executive order transferred the Surplus Property Administration over to the office of the chairman of that board. Under his reorganization powers he is setting up on March 25 a single War Assets Agency, the reason being to try to bring it all, both the policy making feature and the actual operation feature, under one man who promulgates the policy.

Today we have in each of the eleven War Assets Consumers Goods offices a sanitary engineer on the public health side and a medical man. Today both of these men in each office are doctors. If you go down to 209 South La Salle Street you will find our people there. A health institution, be it a state, a local government or a nonprofit hospital health agency of that kind, when it makes its application and places its order for surplus property of any kind that it may need (and I have yet to see any surplus property that a hospital and health institution cannot use in some form or other) that application goes directly to the disposal agency where our people are located, and there the application is processed by our people. It is either approved or modified as the case may be, and the order is filled from the available property there. We started out with what appeared to be a beautiful plan. We thought we could stockpile, that we could build up some reserves and make a comprehensive survey of the hospital needs throughout the country and put this material into the places where the need was the greatest. But the pressure (and I am not saying it should not be) to get the property out into the channels where it is needed made us streamline our procedure to that extent. Undoubtedly we will find more streamlining necessary, with a similar plan for the educational field and for the welfare field. However, the welfare institutions as such are not entitled to the 40 per cent discount.

Before the Smaller Plants Corporation was sent out of existence, through the efforts of the Public Health Service at the central office in Washington an attempt was made to put a doctor, either a veteran or a nonveteran, in the class of a public health institution. I was one who supported that. The Smaller War Plants Corporation said no, that the Surplus Property Act meant an institution and not a person. It seemed to a group of us that one could certainly say that a doctor or a dentist was an institution, but we didn't get very far with it. We thought they were beginning to yield, and then finally with pressure from the veterans we were about to point to where we thought we were going to put it over as far as the veterans were concerned and then let the veterans buy under their priority with the Smaller War Plants Corporation, which would give them priority No. 1. But in the meantime the Smaller War Plants Corporation went out of existence, and we are right back with the veterans having a No. 3 priority and not being classed as an institution. There are many proposed amendments and many pressure groups that would like to see the veterans have a No. 2 priority, and in the case of a doctor and dentist they would be given the 40 per cent discount or whatever other discount may later on come about.

FURTHER DISCUSSION

DR. HENRY A. DAVIDSON, Trenton, N. J.: Would Mr. Ayers outline for us briefly and concretely just how a doctor veteran who has just taken off the cotton and put on blue serge, who needs a tuning fork which he cannot buy, goes about getting things? Where does he take himself, to what place, and what does he do to get the tuning fork from the army or navy surplus?

MR. AYERS: There are two methods the veteran doctor may employ: He takes his discharge papers or his terminal leave papers, or proof of the fact that he is a veteran, to the Smaller War Plants Corporation or to a disposal agency of the War Assets Corporation. I rather imagine all of the secretaries have the locations of those offices; if not, I will see that you are furnished with it. He is there granted a certificate stating that he has preference rights as a veteran to buy surplus government property, and it lists the kind and quantity of such property he wants to buy. Then he goes to the disposal agency; that is the War Assets Corporation, and after March 25 it will be the War Assets Administration. There are eleven of them throughout the country on consumer goods. There are some twenty-two of them today on capital goods. The thinking topside in the War Assets Corporation is that there will be one to every state. I guard my language there because today that is the thinking. I believe the thinking will get into full bloom, because an estimate was taken the other day of the amount of surplus property disposed of today and the amount estimated on hand, and at the rate they are going at the present time it would be some twenty-six and a half years before they could dispose of the surplus property. One other essential is to get on the mailing list of the War Assets Corporation. In that way you will receive listings of what is coming out, and where it is to be disposed of.

DR. DAVIDSON: How do we get on that?

MR. AYERS: By writing the War Assets Corporation.

CHAIRMAN BARKER: Dr. Fishbein, weren't those addresses published in THE JOURNAL?

DR. FISHBEIN: Within the last week, and also the letter telling them what their rights are.

MR. AYERS: Fine. The certificate from the Smaller War Plants Corporation gives you in effect a search warrant to go out and find the property and, if you can find it, get it.

DR. MICHAEL A. TIGHE, Lowell, Mass.: We in Massachusetts had an information bureau set up before the war was over, in anticipation of getting the thing into operation so that when the war did close we would have a good functioning outlet. We think we have a fairly good functioning outlet. Our medical society has established what we might call a series of circuit riders, who go out through the state visiting each section of the state—at least the plan for this year is to have them visit each section of the state—three times, spending two days in each section. The men who are participating in the instruction are the best men in our state, and in addition to that there will be in Boston, beginning next week and running until May, two exercises a week which will start at 4 o'clock in the afternoon, with a recess for dinner and then continuing in the evening. There again the leading medical men in our state are participating. Our three medical schools have established refresher courses of six months' length. All of this material is on file in our information bureau. One thing we seem to have had the most trouble with has been the location of men coming back from the service. We are an urban state, of course, and there is no great scarcity of doctors in our state. We have had to be extremely careful not to recommend an individual to go into a community which for the moment might be short of doctors and have him take the place of some veteran who shortly will return. Our second really serious problem was the matter touched on by Mr. Ayers. I have boys who have never practiced, who went directly from their internship into the Army. There are a lot of them. They come to my office after

they have been to the information bureau, and they tell me their troubles, about their difficulty in getting an office, and so on. We can't do too much for them in that respect, but after a while they come back and say "I have found an office in the location in which I expect to practice. I can't find a darned thing to put in it. I have made the rounds of all these outfits that are supplying doctors' equipment." I had a boy say to me last week that they wanted $250 for a desk, $300 for an examining table and $75 for a sterilizer. "Where am I going to get all that money?" he asked. These boys say they were given to understand that the government has a lot of surplus material, and "when is it going to be opened up to the veteran doctor? We think we should have an opportunity to purchase some of it. Why can't we do so?" Some of the men have talked plainly to me. They have talked to me along the lines of the letter that was read by General Lull. They say "Are the commercial houses behind the movement to prevent this surplus property from being distributed?" I don't believe that is so, but that is what these boys are thinking. They have pressing needs; they have found an office, a location, but nothing to put in it.

MR. AYRES: There are a number of things to prevent that boy from outfitting himself. For instance, here is a catalogue in my hand showing surgical instruments and other things Dr. Tighe was talking about. This catalogue gives the code numbers, the prices and so on. It is issued from the regional office of the Cincinnati War Assets Corporation. Apparently there is a large depot of that sort of material at Cincinnati. There is another large depot of the material that doctors and hospitals need at Denver. It is not scattered around over the nation. For instance, running my eyes down this page, I see sterilizers and things a doctor needs. The sale of that equipment closes to the priority group on February 13, and you have about fifteen days from the time it is opened to the veteran or to the doctor to place your order and get it. In many instances the veteran doctor does not want to buy it until he can inspect it.

DR. HOLMAN TAYLOR, Fort Worth, Texas: A doctor in Texas wanted to buy one of the hospitals. I couldn't find out to whom we should direct an inquiry as to the cost of that hospital; one day while I was trying to find out about it, my telephone rang and an agent of the Surplus Property people, right there in Forth Worth, rang me up to know about a doctor who wanted to buy that same property. The Brinkley outfit wanted to buy it. I think every state ought to have a list of people from whom they could find out about these things.

MR. AYERS: In each one of these Consumer Goods offices there are two persons from the Public Health Service. One is a doctor and the other is a sanitary engineer. If you can make contact with these men I am sure they will see that you get on the mailing list.

DR. R. B. ANDERSON, Fort Worth, Texas: I am not quite clear about this. If some information was published in THE JOURNAL a week ago and if it came from the same source that we got some from about the same time, it has already been changed.

DR. FISHBEIN: I have been working with this question of surplus property disposal for about eight months. We were first called to a meeting in Washington, which Dr. Irons and I attended as representatives of the Board of Trustees, to consider the whole question as to how the Surplus Properties Act could be best administered for the advancement of the public health and for aiding physician veterans in getting back into practice. That conference met for a full day; some fine principles were agreed to by everybody concerned. Among other things it was agreed by the group in Washington who were in authority at the time that a complete set of office equipment might be assembled which would be leased to a returning veteran for $1 a year in case he went to an area in need of a physician, and that the U. S. Public Health Service would be the certifying agency to assure the government that that area was in need of a physician and that he was a qualified physician to move into such an area. After that meeting we heard nothing further about the matter for some time because Washington was in the process of removing one group and putting in an individual, as Mr. Ayers has already mentioned. After this the entire procedure changed and everything that was there decided on was canceled. Since that time, as Mr. Ayers has said, the procedure has changed almost as rapidly as a new procedure is developed. About ten days ago we received from the Surplus Property Administration the announcement of the offices which would have available the lists of property for disposal, and the regulations under which such property would be made available to nonprofit medical institutions and to physician veterans. That was the statement which we printed promptly in THE JOURNAL. It reached us on a Monday morning and we went to press that afternoon. On the next day a representative of the U. S. Public Health Service called on us to say that he was now in charge of this matter and that he was proposing to write for the benefit of the medical profession a communication which would give all the details as to how surplus property would be made available to physicians.

I said "We are printing that this week."

He said "I would like to see it."

I showed it to him and he said "I never heard of it. This must have come out since I left Washington."

"When did you leave Washington?"

"Day before yesterday."

It is rather futile to comment here on the chaos and confusion that have been associated with the disposal of surplus property. I think everybody in the country knows that it has not been well organized, that there has been no consistent policy, that there has been constant changing from one group to another in control. Obviously if the federal government were efficient in this matter and were really anxious to see to it that rural areas not at present served adequately by physicians could be served, they would try to do something definite and positive toward making office equipment and cars available to physicians who are willing to go into rural areas to practice. That was the intent of the law. That section of the law was written after innumerable conferences with the American Medical Association, the American Public Health Association, the American Hospital Association and every medical and welfare organization in the United States. That section of the law was designed to encourage a movement to send qualified physicians into rural areas by making it relatively easy for them to go into such areas and practice. The purpose and intent of the law as developed by Congress have been completely defeated by red tape.

MR. BRYAN: I was especially interested in what Dr. Fishbein had to say, because our experience in New York has been exactly along the same line. In fact, to save the time of the veterans we no longer suggest that they go to see the Small War Plants Corporation or any of its offsprings, because they would only be wasting their time. They have easily 16,000 applicants for every surplus car available. It has seemed to us that there is now just as much justification for the government to instal a system of car rationing, such as was in effect during the war, as there ever was during the war. Physicians need cars, and certainly, the government rates being what they are, we cannot expect that all the needs of the country can be taken care of adequately soon. I was asked by our veterans' group to raise this question here, if possible, and to inquire what the sense of this group might be toward proposing, through whatever means may be necessary, to the federal government that a system of car rationing be reestablished with priorities along the same lines as were granted during the war.

DR. GEORGE KOSMAK, New York: We do not get specific information about surplus property. The *New York State Journal of Medicine* has a very large circulation, and the only thing we can do is to reprint the information that has been contained in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Of course we are glad to do so. It seems to me that if all the editors of state journals could be supplied with this information it would do a great deal of good. I know that in our own state the people don't know where to go to get it.

DR. GRAHAM, Oklahoma: I should like to ask if we could have a little bit more description of the various items rather than simply the serial number. Many of the men will say "Here is a sterilizer, serial 00324. Who makes it?" If they

do not have a medical supply catalogue they can't answer that question. If a better description could be given of the product it would save the men a lot of time. For instance, sometimes they are not interested in x-ray machines except those of a certain particular brand.

MR. AYERS: That same complaint has been voiced before. In the listing that I have in my hand it shows the manufacturer's name. This is the first such listing I have seen. What that will do to help I am sure I don't know, but apparently that complaint has come in sufficiently strongly to get them to put it on the listing.

MR. H. T. SETHMAN, Denver: I have a question for Dr. Johnson. Naturally, the Council on Medical Education and Hospitals, and hospitals subscribing to its policies, are endeavoring to raise standards of practice. However, during the war years a number of hospitals have changed their staff rules and they now admit to practice in those hospitals only men who are certified by the appropriate American boards. Men are now returning from service in the armed forces who are not yet certified but who may have been in the preparatory stages of getting certification at the time they went into service. These men are told that they can no longer bring patients into that hospital and that they must no longer consider themselves members of the staff. Several veteran physicians are quite wrought up about it, some even distinctly profane, and some are threatening court action under the G. I. Bill of Rights. Has the Council on Medical Education and Hospitals considered this problem, has it established a policy, and what is that policy?

DR. VICTOR JOHNSON: The Council is aware of such situations in a number of parts of the country. Our attitude, however, has been that all we can prescribe for an approved hospital is that the staff be competent. Until the G. I. bill went into effect with the provisions to which you refer, the courts repeatedly decided that it is within the right of a hospital itself to determine who shall be on its staff. Before this particular problem arose relative problems had been presented to us before the war about staff appointments and discrimination against one or another group or individuals, and that has been left pretty largely as a local problem in which we are more or less powerless to interfere because of the fact that hospitals have the right, under the law, to appoint whomever they wish on their staffs. I think it would be very difficult for any central agency to do any more than to determine whether the staff is competent to carry on the work of the hospital. The question is broader than merely hospital appointments. It extends to memberships in county medical societies, where in certain areas of the United States men simply cannot get in even though the area is badly in need of a physician. The answer is that we are aware of the problem but we are not certain how it can be solved.

Medical Service for Veterans

COLONEL JAMES C. HARDING, Director, Outpatient Service, Veterans Administration: This paper appeared in THE JOURNAL, February 16, page 415.

DISCUSSION

DR. L. FERNALD FOSTER, Secretary, Michigan State Medical Society, Lansing: I hoped that today I might be able to present some data as to the success of the plan, but because of difficulties in the provision of forms and in view of the fact that the Veterans Administration is moving from Dearborn to Detroit there has been a delay. The first cases are going through the Michigan Medical Service offices today. It was obvious that, having an active, well established medical service plan was the first factor, and with that was the fact that it had to be a solvent corporation. Under the plan of Michigan it is possible that it will be necessary for the plan to make advances in funds, particularly if the load gets heavy, and that will be a sizable amount of money. In that event it is necessary that the plan be solvent to the point where it can provide that advance. Fortunately the Michigan Medical Service plan is just that. The second factor which I believe facilitated the execution of this contract was the development and adoption of a uniform fee schedule for governmental agencies. I have here a few of the fee schedules. This fee schedule is called "the Michigan uniform fee schedule for governmental agencies."

In the depths of the last depression the traditional altruism of the medical profession was apparent. Physicians agreed to do work for agencies of government, particularly in the indigent categories, for what was recognized as cost. I believe we were told at that time that about 50 per cent of the regular schedule represented the cost of rendering medical care. Our council, with a considerable degree of vision, some time ago recognized the fact that possibly within the next five or ten years we could visualize a large segment of our people, and representing a similar segment of private practice, as falling into some governmental category. It has even been said that the veterans themselves, some twelve million, let us say, might develop in the next ten years, with their dependents, into government wards. If and when such dependents should become government wards this would develop a group of some forty or fifty million people. If that many people fell into some governmental category it was perfectly obvious that no sound economics would stand for you and me and any one else rendering care to one third of the population on the basis of the cost of production. Some time ago, anticipating this, our council appointed a committee to study the development of a uniform fee schedule for governmental agencies, not only indigent groups, but any governmental groups, such as the veterans' group, which is certainly not an indigent group. This committee developed a schedule from a survey of county medical society fee schedules from consultation with specialty groups throughout the state, from consultation with hospital staffs and from every conceivable angle from which it could determine a fee schedule. It surveyed some 35,000 items and has developed this fee schedule, which contains 500 units of service representing the usual services rendered.

The philosophy behind this uniform fee schedule for governmental agencies is simply this: It was recognized that the laborer is worthy of his hire and that medical service should and must have an intrinsic value of some kind, and the question was developed in our mind particularly by one of our state officials, who said that if the state of Michigan, for instance, chose to buy a ton and a half truck, all it had to do was to look into a price list and it could find therein some semblance of the value of a ton and a half truck; if it chose to use it at the county poorhouse it didn't get the truck for half price but paid the same price for it whether it was used at the county poorhouse or at the University of Michigan. From that suggestion we realized that to some lay people there was confusion from the fact that there was such a disparity between the value of medical services; in other words, this official said that in a state with eighty-three counties, such as we have, and fifty-five component county medical societies, there were just that many price lists, so to speak, when one chose to buy medical service, and the disparity between it ran from $16.50 for major surgery in one county to $62.50 in another county for indigent categories; so there must be something wrong, that medical service could not vary that much in its value. We believed there should be evolved a minimal fee schedule, based somewhat on the intrinsic value of the commodity, that could be rendered to any agency of government, from the county, state and national levels, and that fee schedule was developed and adopted by the house of delegates and was already in effect at the time the veterans' problem arose. This uniform fee schedule at present is being presented by county medical societies to boards of supervisors, to state agencies of government, and will be offered to any other national agency that has a category for whom it desires to purchase services. Already the Michigan Crippled Children's Commission has adopted this schedule in principle, limited only by statutes, which in the present law limits them to a top level on certain procedures, and at the next session of the legislature it is contemplated that changes will be made in the statutes so that they can adopt this in toto.

The social welfare commission of the state of Michigan is now considering this schedule, and has told us that its adoption looks hopeful. If you look at this schedule you will find that it is a fine schedule of general practice. You will find that in a state such as ours, which varies tremendously in its geographic layout, it is even higher than the private practice schedule in some of the small counties, but by and large it is an average which we believe represents to a certain extent the

minimal value of medical care, and that it should be offered to every agency of government irrespective of whether the category is an indigent group or whether it is a group such as the veterans. We believe it is not a question of who gets the service as to what they pay; it is a question of somebody going to have to pay for it. If they are government wards, the value should not be lowered because of that fact. Fortunately our Medical Service plan is the Michigan State Medical Society. Its corporate body is the house of delegates. Therefore a contract that has been developed with Michigan Medical Service is a contract with the practitioners of the state of Michigan. We believe, therefore, that the integration of this responsibility from Michigan Medical Service through the house of delegates down to the individual doctor places on him a tremendous responsibility for the execution of this contract. We believe the successful conduct of this contract is going to do one thing to which we are all pointing as an objective, and that is to prove that a governmental agency can utilize a voluntary plan in private enterprise and that it is not necessary to set up a great bureaucracy. We are impressing on the individual doctor down in the smallest hamlet of the state that this service to the veteran must be rendered and that it must be good; that he has to render it with the same efficiency he would to his regular clientele; that it has to be given cheerfully, efficiently and in a sufficient quantity such as the needs demand.

DISCUSSION

DR. STANLEY B. WELD, Hartford, Conn.: I want to ask Colonel Harding a question, if I may. He mentioned the chief medical officer as being the one able to authorize the care of the veteran. I did not quite understand where the chief medical officer is. Is he in the hospital or in the Veterans Administration?

COLONEL HARDING: The chief medical officer would be the chief medical officer of a regional office, that is, having the administrative job. However, he can delegate it all the way down the line to any physician in any subregional office or any place along the line from the regional office.

DR. WELD: In view of the statement Dr. Foster made about the American Legion and the Advisory Committee of Physicians, I wish General Lull would give us what information he has on the Advisory Committee for the American Legion.

GENERAL LULL: The Advisory Committee was appointed by Mr. Siberling. We were told that we would make recommendations to the commander for the use of the executive committee of the American Legion that had any bearing on health. We could make these recommendations to the national commander for the use of the executive committee. This committee was asked to make a recommendation about the Veterans Administration bill, which we did. Dr. Stroud was interested in starting something for the prevention of rheumatic heart disease, so we asked the executive committee to give us a grant and to pay the grant to the American Heart Association for the study of rheumatic heart disease in children, as something that would be backed by the American Legion. The central committee asked the chairman of the Rehabilitation Committee in Washington to prepare letters for the commander's signature to send to all state commanders, requesting that the state commander appoint a medical officer on his staff to whom he could turn for advice, and in addition each state commander was to request that a surgeon be appointed on every legion post. We stressed the fact that these men should not be simply job holders but should be men in the community who were looked up to as physicians. We thought that in this way we could probably be of some benefit. We have had replies from most of the states saying that they have appointed some physician as the state surgeon. We checked up on these men and for the most part they are good men. We did not check as far down as the posts. We left that up to the state.

CHAIRMAN BARKER: You are properly guarded in your remarks, General Lull, because Dr. Weld is the surgeon to the American Legion in the state of Connecticut. He is a job holder and a respected physician.

DR. WINGATE M. JOHNSON, Winston-Salem, N. C.: The executive committee of the North Carolina State Medical Society, meeting January 27, voted to accept the contract Michigan has with the Veterans Administration, to be administered by the Hospital Saving Association (that is the Blue Cross), which was the first Blue Cross plan of the country sponsored by a state medical society.

MR. GRAHAM (Oklahoma): In Oklahoma recently I had an opportunity to speak to Mr. Lundquist, head of the Veterans Administration. Subsequently I talked to Major P. B. Smith, and I was rather startled to find that they knew very little about this plan that had been proposed some months ago by General Hawley. They have given us their most hearty cooperation, and we will go further as soon as we return from this meeting. The only reason why I make this comment is that I wonder how many other state medical societies who perhaps in the immediate future are going into the investigation of like plans are likely to run into that same situation with local veterans' administrators.

COLONEL HARDING: We purposely have not disseminated any of this news as yet because it is a new idea and it has a lot of kinks to it. Now that we have two or three concrete types of plans, it is our intention to disseminate this and to put it through our branch offices, these thirteen area offices that are now being organized. We have a deputy administrator in each one of them, and I think we have a deputy chief medical officer in each one of them. I have been handling it myself, and when you realize that there are forty-eight states it takes me an awfully long time to get through.

(To be continued)

Coming Medical Meetings

Aero Medical Association, Chicago, April 7-9. Dr. David S. Brachman, 1016 Dime Building, Detroit 26, Secretary.

Alabama, Medical Association of the State of, Birmingham, April 16-18. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Association of Anatomists, Cleveland, April 4-6. Dr. Eliot R. Clark, University of Pennsylvania School of Medicine, Philadelphia 4, Secretary.

American Pediatric Society, Skytop, Pa., May 1-3. Dr. Hugh McCulloch, 325 N. Euclid Ave., St. Louis 8, Secretary.

American Society for Research in Psychosomatic Problems, New York, May 11-12. Dr. Edwin G. Zabriskie, 714 Madison Ave., New York 21, Secretary.

American Surgical Association, Hot Springs, Va., April 2-4. Dr. Warfield M. Firor, Johns Hopkins Hospital, Baltimore 5, Secretary.

Arizona State Medical Association, Phoenix, May 2-3. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 14-15. Dr. W. R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

California Medical Association, Los Angeles, May 7-10. Dr. George H. Kress, 450 Sutter St., San Francisco 8, Secretary.

Central States Dermatological Society, Detroit, April 27. Dr. Clarence E. Reyner, Henry Ford Hospital, Detroit, Secretary.

Connecticut State Medical Society, Hartford, May 1-3. Dr. Creighton Barker, 258 Church St., New Haven 10, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 18-21. Dr. John G. Young, 1719 Pacific Avenue, Dallas 1, Director of Clinics.

Florida Medical Association, Jacksonville, April 22-24. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Macon, May 7-10. Dr. Edgar D. Shanks, 478 Peachtree St., N.E., Atlanta, Secretary.

Iowa State Medical Society, Des Moines, April 17-19. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Kansas Medical Society, Wichita, April 22-25. Dr. F. R. Croson, 112 W. Sixth St., Topeka, Secretary.

Louisiana State Medical Society, Alexandria, May 6-8. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans 13, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23-24. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.

Medical Library Association, New Haven, Conn., March 25-27. Miss Frida Pliefke, 2000 Medical Arts Bldg., Minneapolis 2, Secretary.

Missouri State Medical Association, St. Louis, March 24-26. Dr. Ralph L. Thompson, 634 N. Grand Blvd., St. Louis 3, Secretary.

Nebraska State Medical Association, Lincoln, May 6-9. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, April 1-4. Dr. Joseph S. D'Antoni, 1430 Tulane Ave., New Orleans 13, Secretary.

New York, Medical Society of the State of, New York, April 29-May 3. Dr. Walter P. Anderton, 292 Madison Ave., New York 17, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, May 1-3. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

Ohio State Medical Association, Columbus, May 7-9. Mr. Charles S. Nelson, 79 E. State St., Columbus, Executive Secretary.

Postgraduate Institute of the Philadelphia County Medical Society, Philadelphia, April 9-12. Dr. George P. Muller, 301 S. 21st St., Philadelphia, Director.

South Carolina Medical Association, Greenville, April 30-May 2. Dr. Julian P. Price, 105 W. Cheves St., Florence, Secretary.

Tennessee State Medical Association, Knoxville, April 9-11. Dr. W. M. Hardy, 706 Church Street, Nashville, Secretary.

Texas, State Medical Association of, Galveston, May 6-9. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

Washington Letter

(From a Special Correspondent)

March 11, 1946.

Lack of Psychiatrists Called "Frightening"

Capt. Francis Braceland, head of the Navy's neuropsychiatric division, informed the Senate subcommittee considering the Pepper bill, which would set up and finance a National Neuropsychiatric Institute in Washington, that "a considerable block of America's civil population does not enjoy mental health." Leading army and civilian psychiatrists testified that there is a "frightening" lack of trained psychiatrists everywhere. Surg. Gen. Thomas Parran of the U. S. Public Health Service also testified in support of the bill. Dr. Lawrence Kuble, psychiatrist consultant to the Office of Scientific Research and Development, opposed the Pepper measure because he said it is inadequate, "like shooting at rocket bombs with a peashooter."

District Antivivisection Bill Losing Support

The Lemke bill to ban vivisection in the District of Columbia is making little headway. Federal Security Administrator Watson B. Miller has asked that the legislation forbidding medical research on dogs here be killed by the House District Committee. In a letter to Chairman John McMillan, Democrat of South Carolina, Mr. Miller warned that the measure would provide a precedent for antivivisectionists that would "seriously deter medical progress" elsewhere in the United States. He added that medical research on living animals has been invaluable in the search for benefits to man's life and health.

Opposition to Military Domination of Science

Dr. Edward U. Condon, director of the National Bureau of Standards, said here in a speech that "science simply cannot go forward under military domination," imposed because of the atom bomb. Simultaneously a fresh drive opened for enactment of the May bill on atomic energy policy in Congress. Among opponents was Representative Holified, Democrat of California, who issued a statement that "the current Canadian-Russian spy scare hysteria" did not afford sufficient grounds to "rejuvenate" atom legislation proposed by Chairman May, Democrat of Kentucky, of the House Military Affairs Committee.

Herbert Hoover to Survey European Food Needs

President Truman has appointed former President Herbert Hoover honorary chairman of a Famine Emergency Committee. Mr. Hoover will fly to Europe on March 15 along with Dr. F. R. Fitzgerald, food allocations officer of the Agriculture Department, and others, to check food requisitions submitted by various countries. Mr. Hoover carried out vast foreign relief programs in Europe after the war of 1914-1918. The United States will endeavor to supply food to war torn areas of Asia and Europe through economies effected by the President's voluntary food conservation program.

Hawley Puts Veterans Hospital on Twenty-Four Hour Day

Acting on complaints that medical care had been denied veterans "after business hours," Dr. Paul R. Hawley, chief medical director for the Veterans Administration, has ordered all veteran hospitals to maintain twenty-four hour medical service. The agency has launched a program to speed up repairs on veterans' artificial limbs.

Funds Asked to Modernize Bureau of Standards

President Truman has asked Congress for a million dollars to modernize the National Bureau of Standards. Acting Budget Director Paul H. Appleby said the present plant is in such bad repair that testing and research work cannot be conducted efficiently.

Suggestion that Doctors Instead of Goats Be Used in Atom Bomb Test

Representative William Lemke, Republican of Indiana, sponsor of the District antivivisection bill, was suggested by several of his fellow Congressmen, according to newspaper reports, as a possible candidate to substitute for goats in the forthcoming Navy atom bomb tests. The Southern Dairy Goat Owners and Breeders Association had protested the use of goats and suggested that Congressmen be used instead. Congressmen declined the honor but said that Mr. Lemke, as the leading animal lover in the House, might accept. "I'm pretty busy now," he is reported to have said. "Why don't they send some of those doctors who always want to cut up dogs?" he said. "This is their chance to see personally just how a living being reacts to this sort of thing." As an afterthought he told his interviewer that newspapermen should be used instead.

Outbreak of Q Fever Among Bethesda Research Workers

An outbreak of Q fever occurred among 26 laboratory workers of the Bethesda National Institute of Health. Dr. Charles Armstrong, chief of the contagious disease division of the National Institute of Health, said that they became infected by breathing the air in the building where Q fever research was being conducted. Those actually working on the disease apparently had developed immunity, because they stayed well. Washingtonians were told that there was no danger of an epidemic.

Treatment of Leprosy in Brazilian Colonies

Mrs. Dena Eunice Weaver of Rio de Janeiro, president of the Brazilian Federation of Societies for the Assistance of Lepers, is in Washington on a five months visit to the United States at the invitation of the Office of Inter-American Affairs. She will study operation and fund raising methods of such agencies as the National Tuberculosis Association and the National Foundation for Infantile Paralysis. She stated that her federation is now treating 17,000 leprous patients in thirty-six colonies in Brazil, which has an estimated 30,000.

Senate Approval of School Lunch Program

The Senate has passed a bill authorizing the federal government to contribute $100,000,000 annually to state operated free school lunch programs for needy children. The bill has been returned to the House, which approved a bill calling for just half this total last week. The Senate also authorized a maximum of $15,000,000 to assist states in providing lunch room facilities and nutrition education programs. This had been cut out of the House bill. An effort is now being made to create a compromise measure.

Army-Navy Merger Bill Redrafted

A revised Army-Navy merger bill providing for a single department of national defense under one secretary, but giving autonomy to the Army, Navy and Air Forces, has been completed by a Senate Military Affairs subcommittee. It will probably be returned to the full committee this week. The Navy is said to be still bitterly opposed to a merger. Any legislation adopted would naturally affect the medical departments of the armed services.

More Food, Medical Care, Urged for World's Children

Miss Katharine F. Lenroot, head of the Children's Bureau, United States Department of Labor, told the Congressional Club that 140 million persons in European countries are now living on 2,000 calories and another 100 million exist on 1,500 or less. Telling of her recent tour of Europe, she urged better food, and medical care for all children in the world. She warned that undernourished, ill clad children will not have the energy and stamina to build a permanent peace.

Benzene Hexachloride, Powerful Insecticide

Benzene hexachloride, an insecticide said to be seven times as effective against flies as DDT, has been described to Congress. The insecticide was disclosed to the House Appropriations Committee during hearings on the 1947 Agriculture Department Supply bill, which has gone to the House floor. The chemical is said to be effective against many insects not bothered by DDT and is extremely toxic to bees.

Medical Scientists to Observe Atom Bomb Tests

Planners of the Navy atom bomb test on Bikini Atoll this summer hope to have observers present from every scientific and technical field which might be affected by release of atomic energy, including medical scientists.

Pretrial Conference for Limb Manufacturers

Judge Bower Broadus of Oklahoma City held pretrial conferences last week with attorneys for most of the eighty-one artificial limb manufacturers and supply firms charged with violation of the Sherman Anti-Trust Act. The judge granted two weeks to the government to prepare documents to be introduced as evidence for authentication. Another week was granted to the defendants to examine documents.

Medical Service Prepayment Plan

The District of Columbia Medical Society has launched a prepayment medical care plan providing limited surgical and obstetric services in the hospital in return for monthly fees paid in advance. It was submitted to Washington physician-members for approval. It will be known as Medical Service of the District.

Venereal Disease Bill to Be Considered March 18

The bill introduced by Representative Bolton, Republican of Ohio, to fight prostitution and venereal disease by continuing activities of the Federal Security Agency's social protection division will be considered at hearings of a House Judiciary subcommittee on March 18.

Progress in Drive for Nurses' Memorial

Progress is reported in the drive to erect a nurses' center in Washington as a memorial to nurses who served during the war. Mrs. Norman Kirk, wife of the Surgeon General of the Army, is sponsor of the drive.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Veterans Administration

Congressman Rogers, New York, has introduced H. R. 5685, to provide for the national health and productive power of the people of the United States by clarifying the laws pertaining to hospital treatment, medical care, domiciliary care and related services. The bill provides that any center, hospital, home or clinic, now or later under contract, control and jurisdiction of the Veterans Administration, War Department, Navy Department or Public Health Service shall be available for the admission of any veteran of any war, military occupation or military expedition since 1897, not dishonorably discharged, without regard to the nature or origin of his or her disease or disability. Prior to the construction of adequate facilities to take care of all veterans requiring hospitalization, the bill proposes, any veteran excluded because of lack of beds shall go to the private hospital of his choice, and the Veterans Administration will be authorized to pay the bill. A hospital building program is proposed involving an expenditure of $550,000,000 to construct 57,000 additional hospital beds. The President will be authorized also to establish six Diagnostic, Research and Proving Centers.

S. 1915, introduced by Senator Langer, North Dakota, provides that the United States Veterans Administration hospital in Fargo, N. D., shall be known as the Clarence Theodore Hoverson Memorial Hospital.

A bill introduced by Representative Fellows, Maine, H. R. 5660, proposes that the provisions of all laws administered by the Veterans Administration which extend benefits to any woman who served honorably as a nurse, chief nurse or superintendent of the Nurse Corps under contract with the United States for ninety days or more between April 21, 1898 and Feb. 2, 1901 be made to apply to any man who served honorably in any such capacity under contract with the United States for ninety days or more between such dates.

District of Columbia

Representative Murphy, Pennsylvania, has introduced H. R. 5650, providing that, notwithstanding any limitation relating to the time within which an application for licensure must be filed, the Commission on Licensure to Practice the Healing Art in the District of Columbia is directed to issue a license to practice the healing art to Dr. Peter Florey, Washington, District of Columbia, in accordance with the provisions of the first paragraph of section 24 of the Healing Arts Practice Act of 1928.

Miscellaneous

H. R. 5686, introduced by Representative Forand, Rhode Island, proposes to authorize so much as may be necessary to enable each state to furnish assistance to needy individuals and to render needed welfare services to recipients of public assistance. If a state plan so provides, medical care may be supplied to the needy individuals.

H. R. 5569, introduced by Representative Cole, New York, would direct the Secretary of the Navy to promulgate regulations providing for the reimbursement of persons in the naval service for the cost of emergency or necessary medical services, including hospital services and medicines, from civilian sources when the person receiving the service is in a duty status.

STATE LEGISLATION

California

Bill Enacted.—A. 88-X has become chapter 56 of the Laws of 1946. It provides for the creation of a State Advisory Council on Hospital Facilities and authorizes the Department of Public Health to make a survey of existing public and private hospitals and health centers in the state, to evaluate the sufficiency of such hospitals and health centers to supply the necessary physical facilities for furnishing adequate hospital, clinic and similar services to the people of the state and to make recommendations concerning additional facilities when necessary.

Kentucky

Bills Passed.—H. 87 passed the senate February 21. To amend the workmen's compensation act, it proposes to increase the number of persons on the medical committee of the workmen's compensation board from three to five and further proposes that such committee shall include at least one surgeon and one neurologist. H. 257 passed the Senate March 1. To amend the law relating to divorce, it proposes to authorize the granting of a divorce when one spouse has become permanently and incurably insane and has been confined in an asylum at least five years prior to filing the suit. In such action the court shall find from the testimony of two or more physicians competent in psychiatry that such insanity is permanently incurable.

Bill Enacted.—S. 56 was approved March 1. It amends the law relating to the practice of pharmacy by providing that applicants for a license to practice pharmacy must be citizens of the United States, must have graduated from a school or college of pharmacy recognized and approved by the Kentucky Board of Pharmacy and must submit proper affidavits showing a minimum of one year of experience in a retail pharmacy under the supervision of a registered pharmacist.

Massachusetts

Bill Passed.—H. 74 passed the House March 5. To amend the law relating to bacteriologic laboratories, it proposes to authorize the Department of Public Health to grant certificates of approval for laboratory tests on milk, food, eating utensils, water and sewerage in accordance with such rules and regulations as the department may establish.

Mississippi

Bills Introduced.—H. 699 proposes to authorize the State Board of Examiners to proceed by injunction to prohibit any person from practicing any profession licensed under the supervision of said board when such person is not duly licensed so to practice. H. 712 proposes to provide for the incorporation of medical, surgical and other corporations organized for improving the physical, mental and moral condition of mankind.

Bills Passed.—H. 72 passed the House February 20. It proposes the creation of a four year medical school as a department of the University of Mississippi which shall be operated as a class A medical school in accordance with the "Council of Medical Education" of the American Medical Association. H. 430 passed the House February 26. It proposes the creation of a Mississippi commission on hospital care to set up and administer a statewide plan for the construction, equipping and maintenance

of hospitals, nurses' homes, health centers, clinics and related facilities and in conjunction therewith prepare a statewide hospital plan and to conduct all necessary studies and surveys incident to developing such a statewide hospital plan. H. 431 passed the House February 27. It proposes the creation of a state medical education board to receive and pass on applications for loans or scholarships made by students who are residents of the state and who desire to become physicians. The purpose of such loans will be to enable the applicants to obtain a standard four year medical education which will qualify them to become licensed, practicing physicians and surgeons in the state.

Bill Enacted.—H. 388 was approved March 4. It provides an appropriation to the state board of health for conducting a program of eradication and control of syphilis and other venereal diseases.

New Jersey

Bills Introduced.—A. 183 proposes the creation of a board of naturopathic examiners and defines naturopathy to be "that system of the healing arts which means 'nature cure or health by natural means' and is defined as the prevention, diagnosis and treatment of human ailments and diseases by means of any one or more of the psychological, physical or mechanical, chemical or material forces of nature, excluding drugs, surgery or other artificial measures." The proposal would authorize the naturopathic licentiate "to practice naturopathy within this state and to that end shall have the authority to examine patients, diagnose and treat by natural agencies any disease, pain, injury, deficiency, deformity, ailment or physical or mental condition and to prescribe and regulate the patient's dietary, sanitary and hygienic requirements; also use the x-ray and any other instrument for the purpose of diagnosing, analyzing and determining the patient's ailment . . . ; also shall have the right and privilege to sign all certificates, as is granted to practitioners of other branches of the healing arts, as well as in all matters pertaining to public health welfare and to have the right to employ nurses and to employ the aid of assistants." S. 120 proposes the establishment of a diagnostic center to be fully equipped with all modern scientific equipment and provided with a staff of competent specialists in the field of medicine, psychiatry and psychology, to the end that full and complete diagnostic services shall be available to any governmental agency desiring to secure a complete diagnosis of any individual having need for such services.

New York

Bills Introduced.—A. 1795 and S. 1542, to amend the education law, propose a number of amendments to the law relating to the practice of pharmacy. A. 1959 and S. 1651, to amend the education law, propose the granting of state aid to assure provision for diagnosis, treatment and supervision of physically handicapped children, defined as children under 21 years of age who by reason of a physical defect or infirmity, whether congenital or acquired by accident, injury or disease, are or may be expected to be totally or partially incapacitated for education or for remunerative occupation. A. 1973 and S. 1773, to amend the state licensing law, propose that persons lawfully inducted into the military service who were licentiates under the state law at the time of their induction may apply for a renewal of their license within three months of discharge from the service or within three months of discharge from any period of hospitalization in a facility maintained by the United States Veterans Administration. A. 1974 and S. 1772, to amend the state licensing law, propose to postpone from July 1946 to July 1947 the time during which previous licentiates whose license lapsed during military service may have a renewal license without examination. A. 1985 and S. 1709, relating to licensed professions, propose that any person who was eligible at the time of his induction to obtain a license to practice a healing art shall not be required to meet qualifications additional to those existing at the time of his induction. A. 1995, to amend the education law, proposes to authorize the department to issue a license to practice medicine to any person otherwise qualified therefor who shall, within one year from the date of this law, give satisfactory evidence to the department (*a*) of fitness as to age, character, preliminary and medical education and qualifications, (*b*) that he has successfully passed the examinations required by or pursuant to this chapter in all but one of the subjects specified therein, (*c*) that he has served for a period of more than three years in the armed forces of the United States in time of war and that he was a resident of the state prior to his enlistment or induction, and (*d*) that he was prevented from taking a reexamination in the subject in which he failed to attain a passing grade by reason of such enlistment or induction. A. 2000, to amend the workmen's compensation law, proposes that no claim for services in connection with any separate, lay-owned x-ray laboratory, medical bureau or other laboratory shall be valid and enforceable unless such laboratory or bureau has obtained a license from the chairman of the workmen's compensation board. A. 2020 and S. 1695, to amend the education law, propose to redefine a podiatrist as one "who holds himself out as being able to diagnose, treat, operate or prescribe for any disease, pain, injury, deficiency, deformity or physical condition of the human feet, and who shall either offer or undertake by any means or method to diagnose, treat, operate or prescribe for any disease, pain, injury, deficiency, deformity or physical condition of the same within the following limitations: operations on the feet shall be limited to minor surgery; and the use of anesthesia shall be limited to local anesthetics." A. 2076 and S. 1751 propose that every common carrier, railroad, street railroad and omnibus line carrying passengers for hire shall carry a first aid kit for the convenience of the passengers should an emergency arise for such use. A. 2083 proposes to extend the life of the temporary state commission previously appointed to formulate a long-range health program from March 1946 to March 1947. A. 2140 proposes to authorize qualified dentists or qualified dental assistants to use general anesthetics in the care and treatment of dental patients but would require all such persons to have at their disposal at the time of administering any general anesthesia such necessary drugs, medicines and equipment for resuscitation as the board of dental examiners shall prescribe. A. 2157, to amend the workmen's compensation law, proposes that fees for medical services allowable thereunder shall include roentgenology, physical therapy, pathology and anesthesiology. S. 1572 proposes the creation of a state board of examiners in massage and defines massage as "treating the human body for hygienic or remedial purposes by stroking, kneading, tapping or rolling with the hands or with other instrumentalities for the purpose of relieving, alleviating or reducing affected parts thereof but shall not include reduction of a fracture or dislocation of a bone." The practice of massage is declared to be distinct from the practice of medicine, surgery, osteopathy or chiropody. S. 1626, to amend the public health law, proposes the creation of a board of nutrition control to consist of five members, of which at least one shall be a licensed doctor of medicine. S. 1797, to amend the workmen's compensation law, proposes that physician members of the industrial council shall not be eligible for authorization to render medical care under the act and shall not examine, treat, consult or in any other way care for a compensation claimant either at the request of such claimant or of a carrier. S. 1904 proposes the creation of a temporary state commission to make a survey and study of the social, educational and physical problems of individuals afflicted with cerebral palsy with the view and purpose of devising and recommending a program for the aid, care, treatment and rehabilitation of such persons.

Bills Passed.—A. 896 passed the senate March 4. To amend the law relating to the practice of optometry, it proposes that applicants must be citizens of the United States or must have declared an intention of becoming such. A. 898 passed the senate March 4. To amend the law relating to the practice of podiatry, it proposes that applicants must be citizens of the United States or must have declared an intention of becoming such. A. 899 passed the senate March 4. To amend the law relating to the practice of dental hygiene, it proposes that applicants must be citizens of the United States or must have declared an intention of becoming such. S. 577 passed the senate February 26. To amend the workmen's compensation law, it proposes that physician members of the industrial council shall not be eligible for authorization to render medical aid under the workmen's compensation law and shall not examine, treat, consult or in any other way care for a compensation claimant

at the request either of the claimant or of a carrier. S. 1189 passed the senate February 25. To amend the law relating to live pathogenic micro-organisms or viruses, it proposes that persons cultivating or possessing live pathogenic micro-organisms of viruses must satisfy the commissioner of health that such organisms or viruses will not become a menace to the public health and shall register with the commissioner of health The registration must be renewed each year. S. 1354 passed the senate March 4. To amend the law relating to nonprofit medical and hospital service corporations, it proposes to authorize the creation of dental expense indemnity service plans. Dental expense indemnity would consist in reimbursement for dental care provided through duly licensed dentists and in furnishing necessary appliances, drugs, medicines and supplies, prosthetic appliances, orthodontic appliances, precious metal and ceramic restorations.

Rhode Island

Bill Introduced.—H. 749 proposes the creation of a Rhode Island Cancer Commission to establish a hospital to be known as the state cancer hospital. Such hospital would be required to conform with all the rules and requirements of the American College of Surgeons for the standardization of cancer hospitals, including the necessary radium and x-ray equipment for the best treatment of patients afflicted with malignant disease.

South Carolina

Bills Introduced.—H. 1143 proposes an appropriation for the establishment and equipping of a hospital to be erected in Charleston as a part of the medical college of South Carolina and for such other facilities for providing medical training at the medical college as may be considered necessary and advisable by the board of trustees. H. 1157 proposes that no person or combination of persons shall practice or attempt to practice as a dental laboratory technician without a certificate or registration either as a registered apprentice or as a registered dental laboratory technician issued pursuant to the provisions of this act by the state board of dental examiners. The practice of a dental laboratory technician is described as "the fabrication of prosthetic dental appliances, such as the using of gold, other metals or combination of metals, plastics, porcelains, artificial teeth or other materials in the manufacture of appliances worn in the oral cavity, replacing teeth and tissue or worn on or around the teeth."

Virginia

Bills Passed.—H. 257 passed the House February 27. It proposes that any person who has tuberculosis in a communicable form who, having been instructed in writing by the local board of health, department of health or health officer or superintendent of any sanatorium of the state to take precautions to protect the members of his household and the public from being infected by tuberculosis communicated by such person, wilfully refuses to follow such instructions shall be guilty of a misdemeanor. H. 289 passed the senate March 1. It proposes to require persons dealing in the handling and processing of food for human consumption to submit each six months a certificate from a physician duly licensed for that purpose by the State Board of Health, certifying that such person has been examined and found free from any contagious or infectious disease. S. J. R. 20 passed the senate March 4. It proposes the creation of a commission to make a thorough and complete study of problems related to hospital and medical care, including the need of hospitals and health centers in the state, adequate plans for the prepayment of hospital and medical care for all classes of citizens, with due emphasis on the special needs of rural people, and other items related to the health and medical care of the citizens of the state. S. 21 passed the senate March 4. It proposes that the state board of health be authorized to initiate and administer a program of hospital treatment and care for indigent persons residing in the state. S. 149 passed the house March 4. It proposes the creation of hospital authorities to engage in hospital construction, maintenance and operation. S. 237 passed the senate March 1. It proposes the creation of an examining board for the certification of clinical psychologists.

Council on Medical Service and Public Relations

Charles H. Coghlan Assists in Organization of Ohio Plan

Charles H. Coghlan, who has been assistant director of Michigan Medical Service, has been named director of the Ohio Medical Indemnity Company in Columbus.

Coghlan has been in Ohio since the middle of August, assisting in the organization of the Ohio medical plan. Announcement has now been made of his appointment as chief executive of the Ohio Medical Indemnity with the title of executive vice president.

With Michigan Medical Service practically from its inception in 1940, Coghlan has been largely responsible for its growth. He is well versed in the operating problems and technics of medical plans and understands the medical profession's point of view.

The home office of Ohio Medical Indemnity will be in Columbus. Blue Cross plans throughout the state will handle the routine operating procedures.

Federal versus Voluntary Health Insurance: A Statement of the New Castle (Del.) County Medical Society

The New Castle County Medical Society feels that a public statement clarifying its attitude on the important subject of costs of adequate medical care is timely and will be helpful to the community. The members of the New Castle County Medical Society are acutely aware of the desirability of easing the burden of expense from unexpected illness in the American family, particularly in the middle and low income groups, and the need for further extending the benefits of preventive medicine for the preservation of the health of the nation. It is known that the quality and availability of medical and hospital care in the United States are better than those of any other country. Such medical advancement has necessarily brought about certain increased costs. In New Castle County and in the state of Delaware, as in the country as a whole, a lowering of costs which is compatible with a continuing improvement in the quality of the medical care should be sought.

This society is strongly in favor of voluntary indemnity health insurance plans. It is opposed to any federal control of medicine which will permit, directly or indirectly, domination of medical service by a governmental bureau. Such control has been proposed from time to time and has been called "socialized medicine." This society is in accord with the principles laid down by the House of Delegates of the American Medical Association and we therefore approve the following:

"The allotment of such funds as the Congress may make available to any state in actual need for the prevention of disease, the promotion of health and the care of the sick on proof of such needs.

"The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

"The continued development of the private practice of medicine subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability."

It is our opinion that federal compulsory health insurance now under consideration in Congress is contrary to these principles and that passage of such legislation will result in increased total costs of medical care, will disturb the age old confidential relationship between the patient and his doctor, will encourage political and bureaucratic control of medicine and eventually will impair rather than improve the quality of medical care received by the citizens of this nation.

From long experience in furnishing medical service both physicians and hospitals know well the reluctance with which a large portion of our population accept such service, even when

it is critically needed and no costs devolve on the recipient. This reluctance to accept medical service can be changed only through a widespread and better understanding of the potential contribution of medicine to the preservation of health. This large group of citizens will not immediately accept medical services whether offered voluntarily or extended to them by federal law. Any system will and should fail of its purpose if forced on them. Only by convincing them of the merits of health insurance, and gaining their voluntary acceptance, can insurance succeed. This procedure is being followed now by the voluntary indemnity plans as vigorously as the population is willing to receive it.

In the opinion of the members of the New Castle County Medical Society the best solution to the problem of spreading the costs of medical care and increasing its availability to all persons in Delaware at the present time and under our democratic form of government is through the furtherance of voluntary health insurance plans. Such a plan was approved by this society and has been in operation since 1943. Already 60,000 persons, one fourth of the people of Delaware, are enrolled. By paying a small premium, the subscriber to the plan makes available a specific sum of money to pay on the cost of each specified operation. The amount may or may not equal the surgeon's fee for a particular operation, and if it does not the additional expense is a matter for individual arrangement between the patient and the physician. This plan has thus far been successful with this group. It should be expanded to give wider coverage against the costs of unexpected and untimely illness.

With further experience and with greater interest of the community in medical costs, the voluntary indemnity plan will succeed in accomplishing the desired ends, which are (*a*) to make medical care in Delaware available to all groups, (*b*) to improve the quality of such care and (*c*) to lower its cost. Similar types of service are in operation the country over. Such a plan retains the doctor-patient relationship, whereby the patient can choose any physician he wishes by his own volition and without bureaucratic control. The plan can be adjusted to meet local needs more readily than any federal compulsory plan. The plan is already in operation, and it seems desirable to give it an earnest, vigorous, patient and fair trial. We recommend that this subject be investigated by all interested citizens.

THE STATUS OF THE ENGLISH DOCTOR

In THE JOURNAL, January 26, page 226, appears a statement credited to Capt. Paul K. Maloney, M. C., A. U. S., entitled "The Status of the English Doctor." As was subsequently pointed out, this article was actually written by Major Clifford L. Graves to Captain Maloney. A letter from Dr. Charles Hill, secretary of the British Medical Association, has now been received in which he emphasizes some inaccuracies and misleading statements which are said to be present in the article. The letter follows:

Dear Sir:—My attention has been drawn to the article in your issue of the 26th January 1946 entitled "The Status of the English Doctor," by Captain Paul K. Maloney.

The article contains so many inaccuracies and misleading statements and gives such a false impression of National Health Insurance in Great Britain that I cannot let it pass without protest. It is quite obvious that Captain Maloney has entirely misunderstood the British scheme: both his facts and his inferences are wrong. In almost every line there is some statement that could be challenged, but if I am not to trespass on your space I must select for comment only a few of the more glaring errors.

Captain Maloney's statements about the financial arrangements of the scheme illustrate how misinformed he is and how many mistakes he can pack into a short paragraph. He says that the individual's contribution is 1/7d. a week, of which the employer pays 10d. and the employee 9d. Actually, the sum of 1/7d. a week is the contribution paid by a woman for both National Health Insurance and contributory pension. The combined contribution for a man is 2/–, but his weekly contribution to National Health Insurance alone is 11d. only. It is not true that an additional 3d. a week has to be paid to secure "a very small sickness benefit." Sickness benefit, that is, a cash benefit, is covered by the man's contribution of 11d. The sickness benefit is not 10/– a week, as Captain Maloney states, but 18/– for a man and 15/– for an unmarried woman. He speaks of shopkeepers and pensioners paying 1/5d. a week, but in fact, employers, self-employed persons and pensioners are not included in the National Health Insurance scheme at all.

Then Captain Maloney makes the astonishing statement that 84 per cent of the funds of the scheme is allocated for administrative charges and 12.5 per cent for the doctors' remuneration and warns his readers that this is what may be expected from a national scheme. The amount absorbed in administrative expenses is actually a little over 17 per cent. Captain Maloney has forgotten to make allowance for the payment of sickness benefit, disablement allowance, maternity grant and other benefits. Moreover, the fund does not collect 82/– a year from each insured person. The total contribution of an insured man, his employer and the state amounts to 55/7d. a year.

Captain Maloney asserts that well over 90 per cent of the population is insured under the scheme. The correct figure is about 45 per cent. The dependents of insured persons are not included in the scheme.

The paragraph on the Approved Societies is completely inaccurate.

Captain Maloney's impression of the status of the insurance practitioner is not true to experience. There is no frequent or regular inspection of doctors' records. It is one of the many duties of the small number of Ministry of Health regional medical officers to call on doctors from time to time and satisfy themselves that proper medical records are being kept. The imposition of a penalty is a rare occurrence. During the last year for which statistics are available only 2 out of 20,000 insurance doctors were fined for failing to keep proper medical records, and the fines in these cases were quite small. Captain Maloney's picture of the doctor as the helpless victim of disgruntled patients is unfair. The doctors themselves generally approve the machinery for dealing with complaints against insurance practitioners, and there is full opportunity of appeal.

Captain Maloney makes much of the alleged limitation of the doctor's authority to prescribe drugs. It is not true that he may not prescribe expensive drugs. He may and does prescribe whatever drugs the patient's condition may require. Avoidance of extravagance is all that is asked, and one cannot, surely, object to that. Captain Maloney is inaccurate in his instances. The injection treatment of hemorrhoids has for long been regarded here as within the general practitioner's range of service. The particular case of alleged excessive prescribing quoted by Captain Maloney was not "investigated by Parliament" and, in fact, half the penalty and costs were remitted after enquiry.

And so I could go on, but I think I have said enough to show that no credence should be given to Captain Maloney's presentation of the British National Health Insurance scheme. We know that the system is by no means perfect and that it has some serious defects, more especially the absence of provision for the dependents of insured persons and the exclusion of consultant and specialist treatment. But on the whole, and so far as it goes, it is a good scheme and works well, and British doctors have a right to expect that when a writer takes it upon himself to describe the scheme to the profession in another country he will make some effort to verify his facts.

CHARLES HILL, Secretary,
British Medical Association,
Tavistock Square,
London, W.C. 1.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

GEORGIA

Ophthalmologic Seminar Honors One Hundredth Anniversary of Abner Calhoun.—Emory University will celebrate, April 4-6, the one hundredth anniversary of the birth of Dr. Abner Wellborn Calhoun, born April 16, 1845, died Aug. 21, 1910, the first professor of ophthalmology of the Atlanta Medical College. Among the speakers in a seminar will be:

Dr. Frank B. Walsh, Baltimore, Myasthenia Gravis.
Dr. Parker Heath, Detroit, Ocular Therapeutics in Glaucoma.
Dr. John H. Dunnington, New York, Surgical Treatment of the Vertical Deviations.
Dr. Walter I. Little, Philadelphia, The Clinical Diagnosis of Retrobulbar Neuritis.
Dr. William L. Benedict, Rochester, Minn., Preparation of the Patient for Cataract Operation.
Dr. Derrick T. Vail Jr., Chicago, The Circulation of the Optic Nerve and Its Influence on Disease.

A feature of the anniversary celebration will be the dedication of the main auditorium of the new Academy of Medicine to the memory of Dr. Calhoun. A portrait will be unveiled and presented to the academy.

ILLINOIS

Eldred Thiehoff Directs Peoria Health Unit.—Dr. Eldred V. Thiehoff, Lansing, recently director of the bureau of local health service, Michigan State Department of Health, has been appointed health commissioner of Peoria, succeeding the late Dr. Sumner N. Miller. Pending the permanent appointment as commissioner, Major George P. Gannon, U. S. Public Health Service, has been acting commissioner. He will remain with the health department to be in charge of the venereal disease program.

Chicago

Personal.—Dr. Walter G. Maddock, associate professor of surgery at the University of Michigan Medical School, Ann Arbor, has accepted a similar position at Northwestern University Medical School.

The Kretschmer Memorial Lecture.—The fifth Edwin R. Kretschmer Memorial Lecture will be delivered on April 26 at the Palmer House by Dr. Charles A. Doan, dean and director of medical research, Ohio State University College of Medicine, Columbus, on "Marrow Hematopoiesis (Synthetic Folic Acid) and Splenic Hematopenia: Experimental and Clinical Studies."

George Whitecotton Goes to California.—Dr. George O. Whitecotton, superintendent of the University of Chicago Clinics for the past seven years, has been appointed medical director of the Alameda County Institutions, Oakland, Calif., to succeed the late Dr. Benjamin W. Black. In addition to his activities as medical director of all county institutions, Dr. Whitecotton will serve as superintendent of the 500 bed Highland-Alameda County Hospital, Oakland, where he spent the years 1932-1936 as intern, senior resident and administrative assistant.

Dr. Huggins to Stay on University of Chicago Staff.—Dr. Charles B. Huggins, professor of surgery (urology) and head of the department of urology, University of Chicago School of Medicine, said on March 7 that he had reconsidered and withdrawn his acceptance of an offer to become director of the Brady urology clinic at Johns Hopkins University School of Medicine, Baltimore (THE JOURNAL, January 26, p. 234). Dr. Huggins said that acceptance of the offer would interfere with his research, which, he added, was incomplete and "in a confidential stage."

IOWA

Editorial Board.—An editorial board has been set up for the *Journal of the Iowa State Medical Association* to aid the editor, Everett M. George, Des Moines. The board consists of John W. Dulin, Iowa City; Horace M. Korns, Dubuque, and Ernest E. Shaw, Indianola.

MINNESOTA

Examination for Venereal Disease Control Position.—The Civil Service Commission of the City of Minneapolis announces a civil service examination to fill the position as director, venereal disease control, for the city of Minneapolis. Because the time is limited, persons wishing information concerning the position should write directly to Mrs. Florence R. Dwyer, acting secretary and chief examiner, city of Minneapolis, Civil Service Commission, 109 City Hall, Minneapolis. The beginning salary will be $5,000; applications will close April 30.

New Professor of Psychiatry.—Dr. Donald W. Hastings, former chief psychiatrist of the Eighth Air Force in England and later chief air force psychiatrist in Washington, has been appointed by the University of Minnesota Medical School Board of Regents, Minneapolis, as professor and head of the department of neuropsychiatry in the medical school, effective March 16. Dr. Hastings will fill the vacancy left by the illness and resignation of Dr. John C. McKinley. Since his release from the army in August 1945, Dr. Hastings has served as professor of psychiatry at the Women's Medical College of Pennsylvania, Philadelphia. He graduated at the University of Wisconsin Medical School, Madison, in 1934.

Course for Physical Therapy Technicians.—The section on physical medicine of the Mayo Clinic, Rochester, plans to offer noncredit three months graduate or refresher courses, beginning July 1. The course will be offered without tuition and will be limited to twenty students, who will be taken only from regular courses for physical therapy technicians which have been approved by the Council on Medical Education and Hospitals of the American Medical Association. A second graduate course is planned to start October 1. These refresher courses are intended to supplant the regular emergency course for the training of physical therapy technicians, which will be discontinued July 1, when the present class completes its training (THE JOURNAL, Sept. 15, 1945, p. 222).

MISSISSIPPI

Dr. Pankratz Named Acting Dean at Mississippi; Other Changes.—Dr. David S. Pankratz, professor of anatomy, University of Mississippi School of Medicine, University, since 1939, has been made acting dean. He succeeds Dr. Billy S. Guyton, who has been acting dean since the resignation of Dr. James B. Looper in June 1945. Dr. Guyton resigned on February 18 to become dean emeritus and professor of surgery. Dr. Pankratz has been assistant dean and chairman of the department of anatomy since June 1945. Other changes in the faculty include the promotion of Ray J. Nichols, Ph.D., associate professor of anatomy, to professor of microanatomy; the appointment of Dr. Marcus E. Norrison as assistant professor of pathology, bacteriology and clinical laboratory diagnosis; the appointment of George P. Blundell, Ph.D., acting assistant professor of pathology and bacteriology, and the appointment of Dr. William T. Tyson Jr., recently released from the army, as acting associate professor of pathology, filling the vacancy that occurred when Dr. Robert M. Moore resigned in June 1945.

NEBRASKA

Dr. Selby Resigns as State Health Officer.—Dr. Claude A. Selby, state director of health since November 1942, resigned, effective January 31. Dr. Selby had been in private practice in North Platte when he entered the state service. He is a former president of the Nebraska State Medical Association. Dr. Wallace S. Petty, Lincoln, director of the divisions of local health services and communicable disease control, was named director of health. Dr. Petty has been a member of the Nebraska State Board of Health since January 1942. Dr. Roland H. Loder, Lincoln, director of the division of maternal and child health, is on leave at the University of Michigan Medical School, Ann Arbor, where he is completing work for his M.P.H. degree. Dr. Donald M. Alderson, Lincoln, assistant director, will be in charge during Dr. Loder's absence.

NEW JERSEY

Hospitals Cooperate in Plans for Medical Center.—The New Jersey Orthopaedic and Orange Memorial Hospitals, Orange, will be consolidated in a plan to establish a medical center serving the whole northern New Jersey area. The projected medical center will include an $800,000 building for New Jersey Orthopaedic to be built on a site adjoining Orange Memorial. The present New Jersey Orthopaedic building will then be converted into a hospital for convalescent patients, filling a long felt need for the entire northern New Jersey territory. The new convalescent hospital will operate as a separate agency, and the Memorial and Orthopaedic hospitals will retain separate identities, though they will occupy adjacent buildings and work closely together. A joint committee representing hospitals and other health and welfare agencies plans to undertake a campaign for $1,500,000 to implement the program.

NEW YORK

Stockton Kimball Named Acting Dean at Buffalo.—Dr. Stockton Kimball, Buffalo, on February 28 was appointed acting dean of the University of Buffalo School of Medicine. Dr. Edward W. Koch, dean for sixteen years, died February 9. Dr. Kimball graduated at Buffalo in 1929. He was appointed instructor in medicine and pharmacology in the medical school in 1935, later promoted to associate and in July 1944 made assistant dean.

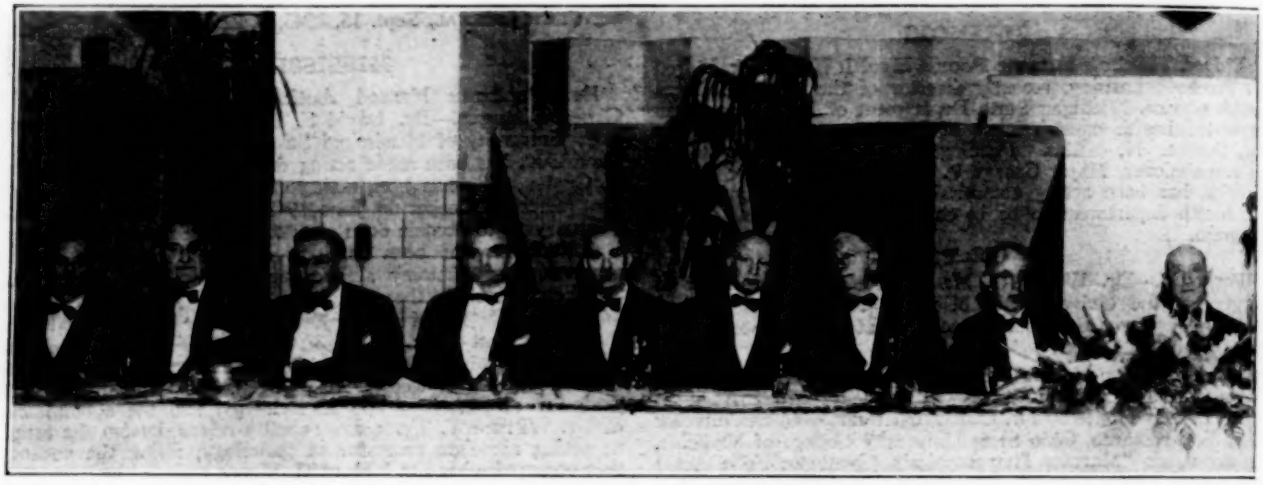
Bill Proposes to Honor Roswell Park.—A bill (S. 341) pending in the current state legislature proposes to change the name of the State Institute for the Study of Malignant Diseases to the Roswell Park Memorial Institute. One of the reasons for the change is that it has been found that many persons are deterred from seeking treatment at the institute because of the word "malignant" in its title, and physicians have been reluctant to send persons there because they did not wish to frighten their patients when they suspected a diagnosis of malignant disease but were uncertain. Another reason is the wish to honor Dr. Roswell Park, who, while professor of surgery at the University of Buffalo School of Medicine, was influential in obtaining an appropriation from the state to establish what was known as the New York State Pathological Laboratory of the University of Buffalo in 1898, becoming its first director. In 1902 the name was changed to the Cancer Institute of the New York State Board of Health, and Dr. Park continued as director. In 1904 he retired as director and became the chairman of the board of trustees, which position he retained, both while the institute was under its latter name and after it became the State Institute for the Study of Malignant Diseases, until his death in 1914.

Millions Asked for Health.—In a special message to the legislature Governor Thomas Dewey recommended March 4 that the state embark on a greatly enlarged health improvement program costing $14,000,000 a year as compared with the present $3,000,000, according to the New York *Times*. One of the main goals set is the elimination of tuberculosis within twenty years under a "master plan." The program is based on the findings of a special interdepartmental committee headed by Dr. Edward S. Godfrey Jr., commissioner of health, which has been studying the subject since last summer. Besides the intensified fight against tuberculosis, the governor called for additional state financial assistance to local health departments and expansion of their services, inauguration of a recruitment and training program for physicians and nurses in the public health field, establishment of an interdepartmental health council and development of new public health programs. The message outlined a four point plan of attack on tuberculosis that included payment by the state of half the cost of hospitalizing victims, abolition of the means test for admission to approved public sanatoriums and hospitals, inauguration of an intensive case-finding method through mass x-ray examinations and participation by the state in research into the prevention and care of tuberculosis. In a discussion of the fifth point of his broader health program, the governor indicated that state assistance would be supplied for health services in parochial and private schools as well as in the public school system. "It makes little sense to provide adequate health services for children of school age through the public school and, on the other hand, to neglect the children who attend schools other than the public schools," he stated. Most of the additional cost of the enlarged program represents new state assistance to municipal and county health and hospital departments. Of the $11,000,000 increase contemplated, about $5,800,000 would go to New York City. Of this $3,000,000 would be for hospitalization of the tuberculous and $2,800,000 for expansion and operation of the health department. The governor took cognizance of the widely divergent views on health insurance expressed by members of a state commission that studied the subject. "Obviously this problem must await further study and disposition by the Congress of bills on this subject pending before it," he stated.

New York City

Harvey Society Lecture.—Dilworth W. Woolley, Ph.D., associate, Rockefeller Institute for Medical Research, will deliver the sixth Harvey Society Lecture of the current series at the New York Academy of Medicine, March 21. Dr. Woolley will speak on "Biological Antagonisms Between Metabolically Important Compounds and Their Analogues."

Presidents' Dinner.—The Medical Society of the County of Kings and the Academy of Medicine of Brooklyn held a dinner February 20 to honor four immediate past presidents of the county medical society. The society voted the annual dinner honoring the retiring presidents in 1941 but discontinued the practice during the war. Guests of honor were Drs. William C. Meagher 1942, John J. A. Gainey 1943, Leo S. Schwartz 1944 and Joseph Tenopyr 1945, all of Brooklyn. The physicians were given medals and scrolls. Dr. Thurman B. Givan, president of the Medical Society of the County of Kings, was toastmaster. In addition to the guests of honor, sixteen ex-presidents of the society were present at the dinner. Seated at the speakers' table were Dr. Charles F. McCarty, Brooklyn, secretary; Dr. Ignatius P. A. Byrne, Brooklyn, chairman of the dinner committee; Dr. Henry J. Barrow; Dr. Jean A. Curran, dean and president of the Long Island College of Medicine, Brooklyn; Dr. William B. Rawls, chairman, coordinating council of the five county medical societies; Dr. Abraham Koplowitz, Brooklyn, president-elect, Medical Society of the County of Kings; Dr. Tenopyr; Dr. Gainey; Dr. Morris Fishbein, Chicago, Editor of THE JOURNAL, who spoke on "Medicine in the Postwar World"; Dr. Givan; Dr. Edward B. Bernecker, newly appointed commissioner of health; Dr. John J. Masterson, Brooklyn, member of the executive committee, Medical Society of the County of Kings; Dr. Meagher; Dr. Schwartz; Dr. William C. White, president, Medical Society of the County of New York, and Dr. Vincent D. Juster, Jamaica, president, Medical Society of the County of Queens.



Drs. Charles F. McCarty, Ignatius P. A. Byrne, Henry J. Barrow, Jean A. Curran, William R. Rawls, Abraham Koplowitz, Joseph Tenopyr, John J. A. Gainey, Morris Fishbein.

Long Island Plans Expansion.—The Long Island College of Medicine, Brooklyn, has announced that a contract has been signed to purchase all but a small portion of a 6½ acre tract of land facing Kings County Hospital, Brooklyn, for an additional campus for the medical college. It is proposed that the buildings the college now utilizes on Henry Street in downtown Brooklyn be redeveloped as a clinical teaching center in cooperation with the Long Island College Hospital and that new basic science and other teaching facilities and research laboratories be built

at the Kings County site. Proposals to extend the industrial medicine activities of the college are being incorporated in the planning for the Henry Street campus. The college expects to continue its "multicenter" plan of clinical teaching, in which ten hospitals and two health agencies in Brooklyn now cooperate, and to extend its affiliations where definite gains in the educational, research or service phases of the program are indicated. It was pointed out that the additional campus was being acquired on the recommendation of the faculty. After lengthy study it was recommended that the college should seek to locate its basic science facilities at the Clarkson Avenue campus while dividing its clinical teaching as at present among various hospitals, both public and private. This would free aboratory space on Henry Street for use in connection with important advances in clinical instruction and for graduate and postgraduate work. Brooklyn State and Kingston Avenue hospitals are adjacent to the Kings County Hospital. The three together contain 6,655 beds, probably the largest aggregate of hospital beds in the eastern United States. The Long Island College division of Kings County Hospital, where the college has had a teaching affiliation for a number of years, includes the branches of medicine, surgery, obstetrics and gynecology and pediatrics and the laboratory sciences in pathology, bacteriology and biochemistry. Its students also study at the Brooklyn State and Kingston Avenue hospitals.

Edward Bernecker Named Commissioner of Health.—Dr. Edward M. Bernecker on March 4 was appointed by Mayor William F. O'Dwyer commissioner of health to succeed Dr. Ernest L. Stebbins, who resigned to become professor of public health administration in the Johns Hopkins School of Hygiene and Public Health, Baltimore (THE JOURNAL, Nov. 10, 1945, p. 757). At the same time Mayor O'Dwyer named Dr. William F. Jacobs, medical superintendent of Bellevue Hospital, to succeed Dr. Bernecker as head of the city department of hospitals. In appointing Dr. Bernecker, the mayor is reported to have ignored a recommendation of a special committee (THE JOURNAL, March 9, p. 659) he had named to consider a successor to Dr. Stebbins. Dr. Thomas Parran, chairman of the committee and Surgeon General of the U. S. Public Health Service, in a statement to the press said that Dr. Stebbins had resigned "effective immediately" when the mayor failed to name one of the eight physicians recommended March 1. Meanwhile the mayor conferred with a group of physicians representing five medical societies in the city. Their chairman, Dr. William B. Rawls, described the naming of Dr. Bernecker and Dr. Jacobs as "splendid appointments." The physicians recommended by the Parran committee were Dr. Hugh R. Leavell, former health commissioner of Louisville, Ky.; Dr. James E. Perkins of Delmar, N. Y., a deputy commissioner of the New York State Department of Health; Dr. David D. Rutstein, now deputy health commissioner of New York; Dr. Edward S. Rogers, an assistant commissioner of the New York State Department of Health; Dr. Myron E. Wegman, a former deputy in the Maryland Health Department, now attached to the New York City Health Department; Dr. Herbert R. Edwards, acting head officer of the Kips Bay Health Center; Dr. Alexander D. Langmuir, a former deputy health commissioner of Westchester County and now in the army, and Brig. Gen. Stanhope Bayne-Jones, former dean of the Yale University School of Medicine.

OHIO

Postcollegiate Assembly.—On March 27 the Ohio State University College of Medicine, Columbus, will resume the annual postcollegiate assembly. The following program will be presented by members of the faculty:

Howard L. Bevis, LL.D., The Program for the Medical College in the University Planning.
Dr. Warren E. Wheeler, Pediatric Problems in the Postwar Period.
Dr. Shelby G. Gamble, Physical Medicine, Its Growing Importance in Modern Medical Practice.
Dr. Arthur M. Culler, Progress in Ophthalmologic Practice and Research.
Dr. Herman A. Hoster, The Present Status of Cancer Research on the Campus at Ohio State University.
Rollo C. Baker, Ph.D., The Background of Our Medical Center.
John B. Fullen, The Place of the Medical Alumni in University Planning.
Dr. Charles A. Doan, The Current Personnel and Physical Expansion of the College of Medicine: Its Teaching and Research Programs.
Dr. William G. Myers, Some Applications of Atomic Energy to Diagnosis and Therapy.
Dr. Allan C. Barnes, The Future of Obstetric and Gynecologic Practice.
Dr. Robert M. Zollinger, Current Problems in General Surgery and Their Solution.

Dr. Hymer L. Friedell, Rochester, N. Y., executive officer, Manhattan Project Medical Research Section, as guest lecturer, will discuss "The Effects of the Atomic Bomb at Hiroshima."

University News.—Albert Baird Hastings, Ph.D., head of the department of biologic chemistry, Harvard Medical School, Boston, will address the commencement at Western Reserve University School of Medicine, Cleveland, March 18 on "Chemical Sectors of Medicine's Frontier." Eighty-two men and one woman will receive their degrees, the entire group including seventy-four in the army-navy training programs and nine civilians.

Thurman B. Givan, Edward M. Bernecker, John J. Masterson, William C. Meagher, Leo S. Schwartz, William C. White, Vincent D. Juster.

VIRGINIA

Physicians Plan War Memorial.—The Albemarle County Medical Society, February 8, adopted a resolution expressing the society's approval of setting aside a memorial floor in the proposed new University of Virginia Hospital building to honor local men and women who served in World War II.

Stuart McGuire Honored.—The second edition of Dr. John A. Hardy's "Synopsis of the Diagnosis of the Surgical Diseases of the Abdomen," published in 1945, carries the dedicatorial sentence "To Stuart McGuire of Virginia, who embodies the genius and excellence of a lineage of great surgeons, this book is admiringly dedicated." Dr. McGuire once was president of the Medical College of Virginia, Richmond, and an annual lectureship there now bears his name.

WASHINGTON

Health Department News.—Dr. Leonard A. Dewey, Seattle, has recently returned from military service to his position as head of the venereal disease control section of the Washington Department of Health. Dr. Walvin R. Giedt, Seattle, is head of the epidemiology section.

Personal.—Dr. Edwin S. Bennett, Los Angeles, has been named general superintendent of the King County Hospital system with headquarters at Harborview, effective February 1. Dr. Bennett, before his entry into the army, was medical director of the Los Angeles County Hospital

Physician Becomes Missionary.—Dr. Robert S. Sandilands, Montesano, who graduated at Northwestern University Medical School, Chicago, in 1938, plans to give up his practice in Montesano to enter medical missionary work; he will be stationed in Cameroon, French West Africa.

Golf Course Chosen Site for Medical Building.—Buildings for the new medical and dental school at the University of Washington will be located on the northwest corner of the university golf course. An overpass will connect the building with the main campus of the university. Construction is expected to begin early in the summer of 1946, and the building should be ready for occupancy by the fall of 1947.

WISCONSIN

Journal Dedicated to Mr. Braun.—The *Wisconsin Medical Journal* dedicated its December issue to Mr. Will C. Braun, recently retired business manager of the American Medical Association.

Heart Association Formed.—Papers were recently filed in the office of the secretary of state to incorporate the Wisconsin Heart Association, a new group to sponsor and assist in a state program for the prevention of heart disease. Incorporators are Drs. Ovid O Meyer, Nels A. Hill and Chester M. Kurtz, Madison; Alvin G. Koehler, Oshkosh, and Vincent M. Koch, Janesville.

Dr. Sevringhaus Goes to New Jersey.—Dr. Elmer L. Sevringhaus, professor of medicine, University of Wisconsin Medical School, Madison, has resigned to become director of clinical research for Hoffman LaRoche, Inc., in Nutley, N. J., effective about March 15. Dr. Sevringhaus has been a member of the Wisconsin staff since 1921, the year he graduated at Harvard Medical School, Boston.

Trust Fund Created for Young Physician's Children.—A trust fund has been started by associates of Lieut. Commdr. George W. Fox, Milwaukee, who died in action aboard the aircraft carrier *Franklin* after it was bombed by the Japanese near Kobe on March 19, 1945. Dr. Fox was awarded the Navy Cross posthumously for extraordinary heroism under fire. The trust fund is being set up through monies which are still being accumulated to assure a college education for the physician's three children. Dr. Fox was 38 years of age.

Supervisor of Local Health Services Named.—Dr. Allan A. Filek, Madison, was appointed supervisor of local health services by the state board of health at its January meeting. He will also continue his duties as director of the tuberculosis division until a qualified physician can be obtained to fill his former post. A tenth health district comprising Douglas, Washburn, Burnett, Polk and Barron counties, to be put into effect as soon as personnel can be obtained, was approved by the state board of health at its December meeting. Ten districts were authorized by the legislature, but only nine were set up originally. Five districts remain without medical officers, however, and these vacancies will be filled before the new district is staffed.

GENERAL

New Journal on Plastic and Reconstructive Surgery.—The American Society of Plastic and Reconstructive Surgery announces the publication of an official periodical to be known as *Plastic and Reconstructive Surgery*. The first number will appear in July and the journal will be issued bimonthly. One volume of 500 pages will be issued each year and the subscription price will be $6. Dr. Warren B. Davis, Philadelphia, will be the editor, with a board of twelve associate editors. Subscriptions should be sent to the publishers, the Williams and Wilkins Company, Baltimore 2.

National Committee on Medical Care Formed.—Dr. Leverett D. Bristol, commissioner of health and welfare, Maine Department of Health and Welfare, Augusta, has been appointed chairman of the National Committee on Medical Care of the American Public Welfare Association. The committee, made up of leading welfare authorities in the United States, includes state administrators as well as representatives of private agencies. The committee will consider adequate medical care for persons in need, the development of wise administrative procedures to cover the medical aspects of public assistance and a satisfactory program for the care of the chronically ill.

Snow Medal Awarded.—The William Freeman Snow Medal, given annually for distinguished service to humanity, was presented February 6 to Dr. John H. Stokes, director of the Institute for Control of Syphilis of the University of Pennsylvania, Philadelphia. Presentation took place during the annual meeting of the American Social Hygiene Association, New York. It coincided with a similar award in London to Col. Lawrence W. Harrison of the British Ministry of Health. The presentation in London was made by Sir Wilson Jameson, chief of the British Ministry of Health, and was heard at the local gathering by transoceanic rebroadcast.

Norton Award Goes to Edward Hume.—The Norton Medical Award for 1946 has been given to Dr. Edward H. Hume, New York, for his book Doctors East, Doctors West, an American physician's life in China. Doctors East, Doctors West is Dr. Hume's life story of building a medical center in Changsha, China, where the science of the West and the wisdom of the East met and where Chinese and Americans worked side by side in the pursuit and application of medical knowledge. Dr. Hume was born in India, received his education in the United States and spent twenty-five years in China, where he took part in the founding and development of the Yale-in-China Medical School. At present he is secretary of the Christian Medical Council for Overseas Work in New York. Doctors East, Doctors West will be published on May 3.

Morton Seidenfeld Joins Infantile Paralysis Foundation.—Morton A. Seidenfeld, Ph.D., until recently chief clinical psychologist with the rank of lieutenant colonel with the division of neuropsychiatry, office of the Surgeon General, U. S. Army, on February 25 was appointed director of psychologic services for the National Foundation for Infantile Paralysis. In cooperation with the medical director of the national foundation, Dr. Seidenfeld will inaugurate a research program on the psychologic problems and needs of infantile paralysis patients and will develop a plan for their psychologic treatment. Basil O'Connor, president of the foundation, said that Dr. Seidenfeld's appointment will add an important new sphere of activity to the organization's medical program. Based on modern practice in clinical psychology, the projected work will widen the scope of national foundation planning for the treatment of poliomyelitis patients, especially during convalescence, continuing care, and rehabilitation. When he entered the army in 1940 Dr. Seidenfeld had been director of rehabilitation for the Tuberculosis Institute of Chicago and Cook County.

Physicians Literary Guild Organized.—The American Physicians Literary Guild was organized in San Francisco January 2 as a brother organization to the American Physicians Art Association. Officers include Drs. James C. Janney, Boston, president; Charles H. Best, Toronto, Ontario, Canada; James T. Flexner, New York, Martin Gumpert, New York, and Henry E. Sigerist, Baltimore, vice presidents; Francis H. Redewill, San Francisco, secretary; Paul P. E. Michael, Oakland, treasurer; Frederic N. Loomis, Oakland, chairman of judges, and Max Thorek, Chicago, general adviser. All physicians in America who write as an avocation are invited to join the guild. The group hopes to stimulate the best physician writers to send in their unpublished works to the literary exhibition during the annual session of the American Medical Association. It will also attempt to stimulate all physicians to complete a nonmedical essay, monograph, short story or poem for competitive consideration. For purposes of classification and awarding, literature is divided into fifteen classes with awards of silver and bronze plaques to be awarded first and second prizes respectively. Watch fobs will be awarded to each physician writer who sends in a literary work of merit. There will also be a president perpetual cup for the best medical essay or monograph, a secretary perpetual cup for the most humorous play, short story or poem and a grand prize given outright by Dr. Thorek for the best piece of literature handed in at the exhibition. The manuscript for competition should be nonmedical so as not to compete with writings presented at medical meetings or those published in medical journals. Other classifications include nonfiction: true story, up to World War II and beyond, essays and monographs; fiction: plays (drama, humorous), short story (serious, humorous), poetry (serious, humorous) and novel (romantic, historical, dramatic, action stories). Additional information may be obtained through Dr. Redewill, secretary, Flood Building, San Francisco 2. All manuscripts must be shipped to the secretary before June 1, express collect. After the exhibition the manuscript will be shipped to the author, express prepaid.

CORRECTION

Overtreatment Dermatitis of the Feet.—In an article with this title by Dr. G. B. Underwood in THE JOURNAL of February 2, page 255, appears the statement that the product called iso-par has as active ingredients "tars and derivatives." The manufacturer has called attention to the fact that the active ingredients of iso-par ointment are synthetic fatty acids derived from petroleum distillates. The product has been accepted by the Council on Pharmacy and Chemistry.

Deaths

Chester Arthur Stewart ✠ New Orleans; University of Minnesota Medical School, Minneapolis, 1919; born in Hannibal, Mo., Nov. 6, 1890; professor and director of the department of pediatrics at the Louisiana State University School of Medicine; served as clinical professor of pediatrics at the University of Minnesota Graduate School of Medicine and at his alma mater, where he had also been an instructor in the department of anatomy, instructor in pathology, a fellow in pediatrics and assistant professor of pediatrics; past president of the Hennepin County (Minn.) Medical Society; member of the American Academy of Pediatrics and the Northwestern Pediatric Society; served as president of the Louisiana State Pediatric Society; in 1937 represented the National Tuberculosis Association and the American Academy of Pediatrics at the fourth International Congress of Pediatricians in Rome; served as director at large of the National Tuberculosis Association; formerly consulting pediatrician to the Lymanhurst Health Center and member of the staffs of the Abbott and Swedish hospitals, all in Minneapolis; on the staff of the Charity Hospital, where he died February 8, aged 55, of coronary occlusion.

Frank Spooner Churchill, Bass River, Mass.; Harvard Medical School, Boston, 1890; born in Milton, Mass., Aug. 26, 1864; member and in 1913-1914 chairman of the Section on Diseases of Children, American Medical Association; member and past president of the American Pediatric Society; served during World War I; at one time served on the staff of the Children's Memorial Hospital in Chicago, where he was on the staffs of Cook County and Presbyterian hospitals, medical inspector of the board of health and director of the milk commission; served as physician for the Juvenile Court, Chicago; at one time associate professor of pediatrics at Rush Medical College and member of the board of directors of the Juvenile Psychopathic Institute and the Infant Welfare Society in Chicago; medical assistant, Judge Baker Guidance Clinic, Boston; editor of the *American Journal of Diseases of Children* from 1911 to 1918; died in the Faulkner Hospital, Boston, February 27, aged 81, of heart disease.

John Verne Bohrer ✠ New York; Cornell University Medical College, New York, 1914; member of the founders group of the American Board of Surgery; member of the American Surgical Association and the American Association for Thoracic Surgery; for many years instructor in surgery, University and Bellevue Hospital Medical College; served as president of the New York Society for Thoracic Surgery; fellow of the American College of Surgeons; director of surgery at the Knickerbocker Hospital; surgeon in charge of the Willard Parker Hospital; died in the New York Hospital December 6, aged 59, of hypertensive heart disease.

Charles Samuel Kibler ✠ Tucson, Ariz.; Rush Medical College, Chicago, 1914; fellow of the American College of Physicians; member of the American College of Chest Physicians and American Heart Association; specialist certified by the American Board of Internal Medicine; served during World War I; past president of the Pima County Medical Society; on the staffs of St. Mary's Hospital and Sanatorium and Pima County General Hospital; affiliated with the Tucson Medical Center, serving as president of the first staff; co-exhibitor at the 1939 session of the American Medical Association of a display on potassium in hay fever; died February 25, aged 56, of coronary thrombosis.

Clifton Smith Abbott ✠ Laconia, N. H.; Dartmouth Medical School, Hanover, 1894; past president of the New Hampshire Medical Society; fellow of the American College of Surgeons; for many years secretary and treasurer of the Belknap County Medical Society; on the staff of the Laconia Hospital; died in the Mary Hitchcock Memorial Hospital, Hanover, December 11, aged 74, of a skull fracture received in a fall.

Alfonza A. Aratus, Cincinnati; Louisville (Ky.) Medical College, 1904; died in the Christ Hospital December 1, aged 75, of cardiac and respiratory failure and prostatic hypertrophy.

Wylie McLean Ayres, Cincinnati; Medical College of Ohio, Cincinnati, 1900; at one time professor of clinical ophthalmology at the University of Cincinnati College of Medicine; fellow of the American College of Surgeons; on the staff of the Good Samaritan Hospital, where he died December 22, aged 71, of arteriosclerotic heart disease and myocardial infarction.

Frank Herbert Bartlett ✠ Muskegon, Mich.; Tufts College Medical School, Boston, 1919; past president of the Muskegon County Medical Society; fellow of the American College of Physicians; medical director and superintendent of the Muskegon County Sanatorium; on the staffs of the Hackley and Mercy hospitals; formerly affiliated with the Central Maine Sanatorium, Fairfield, Maine and Healthwin Hospital (St. Joseph County Tuberculosis Hospital) South Bend, Ind.; died January 25, aged 51, of a skull fracture received in a fall.

John William Birk ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; fellow of the American College of Surgeons; veteran of the Spanish-American War; on the staff of the Ravenswood Hospital; served as obstetrician and as president of the staff at the Lakeview Hospital; formerly instructor in obstetrics at his alma mater; died December 8, aged 71, of cerebral hemorrhage and chronic nephritis.

Luther Erskin Boone, Chattanooga, Tenn.; Chattanooga Medical College, 1904; died December 6, aged 66.

Leon Maurice Bowes ✠ Chicago; Rush Medical College, Chicago, 1903; served during World War I; colonel, medical reserve corps, U. S. Army, not on active duty; member of the staff of the Swedish Covenant Hospital, where he died December 24, aged 67, of organic heart disease, coronary sclerosis and arteriosclerosis.

Edwin H. Bradley, Peoria, Ill.; University of Vermont College of Medicine, Burlington, 1891; member of the American Medical Association; past president of the Peoria City Medical Society; for many years a member and at one time president of the staff of St. Francis Hospital, where he died December 23, aged 84, of cardiovascular renal disease and arteriosclerosis.

Theodore Wallingford Brown, Marissa, Ill.; University of Illinois College of Medicine, Chicago, 1940; member of the American Medical Association; began active duty as a first lieutenant in the medical corps, Army of the United States, on Feb. 3, 1943 and relieved from active duty in November 1944; died December 3, aged 35, of injuries received when he fell down two flights of steps.

Augustus Irving Burdeno, Wyandotte, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1883; formerly health officer of Delray and bank president; died December 3, aged 87, of pneumonia.

Jay M. Burgess ✠ Detroit; Michigan College of Medicine and Surgery, Detroit, 1900; served as coroner; on the staff of the Providence Hospital, where he died December 8, aged 72, of cerebral hemorrhage.

Grover C. Caddell, Hoffman, N. C.; North Carolina Medical College, Charlotte, 1913; member of the American Medical Association; chairman of the board of county commissioners; died in the Moore County Hospital, Pinehurst, December 19, aged 58, of heart disease.

Clyde Clement Carroll, White Mills, Ky.; Hospital College of Medicine, Louisville, 1904; member of the American Medical Association; died December 4, aged 66, of cerebral hemorrhage.

Frank H. Caughell, Hermann, Mo.; University Medical College of Kansas City, 1883; local surgeon for the Missouri Pacific Railroad; postmaster; died November 22, aged 83, of diabetes mellitus.

Henry Dickinson Causey ✠ Fairmont, W. Va.; University of Maryland School of Medicine, Baltimore, 1911; served during World War I; formerly on the staff of the Veterans Administration Facility in Portland, Ore.; medical consultant for the Consolidated Coal Company; died December 12, aged 64, of heart disease.

Charles Cornelius Clark ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; fellow of the American College of Surgeons; served during World War I; on the staff of the Jackson Park Hospital, where he died December 28, aged 66, of cerebral thrombosis.

Ralph Deming ✠ Toledo, Ohio; Hahnemann Medical College and Hospital of Philadelphia, 1902; member of the Radiological Society of North America, Inc., and the Toledo Academy of Medicine; served during World War I; on the staffs of the Robinwood Hospital, Maumee Valley Hospital and the Mercy Hospital, where he died December 4, aged 67, of heart disease.

Jerome De Motte, Odon, Ind.; Medical College of Ohio, Cincinnati, 1896; member of the American Medical Association; died in Evansville November 5, aged 76.

Arthur Norton Donaldson ✦ Santa Ana, Calif.; College of Medical Evangelists, Los Angeles, 1915; clinical professor of medicine at his alma mater, where he had been professor of physiology; specialist certified by the American Board of Internal Medicine; formerly medical director of the Loma Linda Sanitarium and Hospital in Loma Linda and the Harriman Jones Clinic and Hospital in Long Beach; died in Loma Linda December 16, aged 57, of coronary thrombosis.

Breckenridge Johnson Duckett, Muskogee, Okla.; Medical Department of Grant University, Chattanooga, Tenn., 1900; died in a local hospital November 17, aged 78, of injuries received when he was struck by an automobile.

James W. Fortune, West Lafayette, Ohio; Starling Medical College, Columbus, 1891; died November 10, aged 84, of cerebral hemorrhage.

Robert Franklin Goodman, Boyds Creek, Tenn.; Tennessee Medical College, Knoxville, 1895; died in the General Hospital, Knoxville, November 12, aged 77, of injuries received when he fell under the wheels of a mule-drawn wagon.

William L. Gordon, Washburn, N. D.; University of Louisville (Ky.) Medical Department, 1894; for many years county health officer; died in Bismarck December 9, aged 72, of uremia and terminal pneumonia.

Isaac Lott Gotthelf ✦ Saguache, Colo.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; served as president of the San Luis Valley Medical Society; died in the Denver and Rio Grande Western Railroad Hospital, Salida, December 4, aged 65, of myocarditis.

William Slater Greenleaf ✦ Atlantic, Iowa; State University of Iowa College of Medicine, Iowa City, 1895; member of the Radiological Society of North America, Inc.; on the staff of the Atlantic Hospital; died December 9, aged 73, of heart disease.

Walter Kingsley Grigg ✦ Albany, N. Y.; Albany Medical College, 1927; assistant in medicine at his alma mater; on the staffs of the Albany Hospital and the Child's Hospital; attending physician, Albany Guardian Society; died December 8, aged 53, of coronary thrombosis and coronary sclerosis.

Ernest A. Hancock, Ranger, Texas; Bennett College of Eclectic Medicine and Surgery, Chicago, 1889; died December 5, aged 78, of heart disease.

Harmon Howard Hays, Cleves, Ohio; Medical College of Ohio, Cincinnati, 1879; died December 5, aged 89, of arteriosclerosis.

Charles Francis Hester, Newton, Miss.; Mississippi Medical College, Meridian, 1907; died in Rush's Infirmary, Meridian, December 11, aged 65, of lobar pneumonia.

John Morley Hoag ✦ Baltimore; College of Physicians and Surgeons, Baltimore, 1902; died January 10, aged 70, of coronary thrombosis.

Charles Waln Huffman, Lebanon, Tenn.; Eclectic Medical Institute, Cincinnati, 1894; member of the American Medical Association; died November 7, aged 75, of amebiasis.

Clarence Ludlam Hyde ✦ Akron, Ohio; University of Michigan Homeopathic Medical School, Ann Arbor, 1906; fellow of the American College of Physicians; medical superintendent of the Edwin Shaw Sanatorium; on the staff of the City Hospital; at one time superintendent of the J. N. Adam Memorial Hospital in Perrysburg, N. Y.; died December 1, aged 67, of coronary thrombosis.

Addison Cornelius McCain, Greeley, Colo.; University of Colorado School of Medicine, Denver, 1904; member of the American Medical Association; on the staff of the Weld County Public Hospital, where he died November 27, aged 69, of carcinoma of the stomach.

John Johnston Miller, San Jose, Calif.; University of Michigan Homeopathic Medical School, Ann Arbor, 1880; served two terms as health officer of Santa Clara County; member of the board of health; died February 8, aged 86, of heart disease.

Lawrence Joseph Rigney ✦ Wilmington, Del.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1920; fellow of the American College of Physicians; instructor in medicine at the University of Pennsylvania School of Medicine in Philadelphia; affiliated with the Delaware Hospital and St. Francis Hospital, where he died November 28, aged 55, of rupture of esophageal varix and cirrhosis of the liver.

William Zinke, Collbran, Colo.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1890; member of the American Medical Association; died November 25, aged 79, of heart disease.

DIED WHILE IN MILITARY SERVICE

William Thomas Edmundson, Greeley, Colo.; University of Colorado School of Medicine, Denver, 1944; commissioned a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on Oct. 9, 1944; died in the U. S. Naval Hospital, San Diego, Feb. 4, 1945, aged 23, of atypical primary pneumonia.

Charles Manly Griffith, New York; University of Virginia Department of Medicine, Charlottesville, 1917; born in Lexington, N. C., June 10, 1893; clinical professor of otolaryngology at the New York Post-Graduate Medical School and Hospital, Columbia University; member of the American Medical Association and the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; specialist certified by the American Board of Otolaryngology; consulting otolaryngologist at St. Agnes Hospital in White Plains and on the staff of the Manhattan Eye, Ear and Throat Hospital; commander, medical corps, U. S. Naval Reserve; participated in the South Pacific campaign and had received the Purple Heart and the Navy Cross; died Oct. 9, 1945, aged 52.

Max Leonard Holland ✦ Roanoke, Va.; Medical College of Virginia, Richmond, 1935; interned at the Baroness Erlanger Hospital in Chattanooga, Tenn., and the Toledo Hospital in Toledo, Ohio; served a residency at the Gill Memorial Eye, Ear and Throat Hospital; began active duty as a captain in the medical corps, Army of the United States, on July 29, 1942; died in Fort Benning, Ga., Nov. 9, 1945, aged 37, of bronchopneumonia.

Harry H. Jackson, Detroit; Detroit College of Medicine and Surgery, 1917; served during World War I; began active duty as a commander in the medical corps of the U. S. Naval Reserve on Aug. 17, 1940; promoted to captain; died in the U. S. Naval Hospital, Jacksonville, Fla., Dec. 17, 1944, aged 51, of ruptured abdominal aneurysm of the aorta.

Raymond Luft, Norwood, R. I.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1934; born in Jersey City, N. J., Nov. 16, 1904; interned at the Royal Victoria Hospital in Montreal, Que., Canada; assistant resident physician at the Massachusetts General Hospital in Boston; past president of the Kent County Medical Society and the Rhode Island Public Health Officers Association; member of the American Medical Association; superintendent of health in the city of Warwick; served on the staff of the Rhode Island Hospital in Providence; began active duty as a lieutenant in the medical corps, U. S. Naval Reserve, on February 28, 1944; assigned to the auxiliary personnel attack ship U. S. S. *Henrico* and participated in the invasion of Normandy; sent to North Africa later to prepare for the invasion of southern France; became ill and was transferred to a hospital in Naples and shortly afterward came back to the United States; after hospital treatment here he was assigned as medical officer for training units at Harvard and Tufts College, a position he held until he was hospitalized ten days prior to his death; held the European-African-Middle Eastern Area Campaign Medal; died in the Naval Hospital, Newport, June 23, 1945, aged 40, of coronary thrombosis.

Robert Bliss Miller, Argos, Ind.; Indiana University School of Medicine, Indianapolis, 1934; member of the American Medical Association; interned at St. Joseph Hospital in South Bend; began active duty as a captain in the medical corps, Army of the United States, on Dec. 15, 1940; died in the Percy Jones General Hospital, Fort Custer, Mich., April 30, 1945, aged 35, of carcinoma.

Jesse Frederick Steiner Jr., Seattle; Stanford University School of Medicine, San Francisco, 1941; born in Chicago, Oct. 4, 1914; interned at the San Francisco Hospital in San Francisco; served with the Royal Medical Corps of the British army from Sept. 6, 1941 to May 24, 1943, as a first lieutenant and later as captain; transferred to the medical corps, Army of the United States, on May 25, 1943, serving as first lieutenant and later as captain; served with the 16th Field Hospital, which was with General Patton's Third Army during its drive through France and Germany, and earned five battle stars for his European Theater ribbon and the Bronze Star Medal; relieved from active duty Oct. 13, 1945; assistant resident physician at Stanford University Hospital in San Francisco, where he died October 11, aged 31.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 16, 1946.

The Services to Medicine of the Aslib Microfilm Service

The cutting off in the early days of the war of the scientific periodicals of Germany and of occupied countries presented a serious problem in obtaining information vital to research. To meet this difficulty the Association of Special Libraries and Information Bureaus (Aslib) was organized in April 1942 through the cooperation of the Royal Society, the Rockefeller Foundation and British Industry. This organization supplied a microfilm service of scientific periodicals published in Germany and occupied countries for use by the British and American governments and by British and American scientific institutions and research centers. The library of master negatives accumulated for the purpose contains some 14,000 separate issues of 500 titles. The Aslib Microfilm Service supplied China when that country was cut off from ordinary surface transport. This service grew so that during the last year 170 periodicals were regularly microfilmed and six positive copies of each were flown to China. One hundred microfilm projects set up in a dozen reading centers enabled the Chinese to keep in touch with developments in the outside world.

The end of the war reduced the demand for the Aslib Microfilm Service, but there was a need for documentary reproduction. A plan for the rehabilitation of the medical libraries in Europe, destroyed or despoiled by the Germans, was presented by the Royal Society of Medicine. Aslib agreed to the transfer of the Microfilm Service and became an integral part of the Central Medical Bureau of the Royal Society of Medicine. Requests for copies from existing master negatives and for copies of individual references may be addressed to Aslib, 52 Bloomsbury Street, London, W.C. 1.

A Residential Rehabilitation Center

A residential rehabilitation center for those injured in the war or in industry has been set up at Egham near the Eton school. Employers, trade unions and orthopedic surgeons are convinced that severe disablement and convalescence must be followed by a gradual approach to ordinary employment. On a 55 acre estate dormitories, workshops, class rooms and a gymnasium surround a spacious mansion located in well wooded grounds. Here 230 men, whom the center can accommodate during courses lasting six to eight weeks, are gradually acclimatized to working conditions by gaining confidence in the manipulation of artificial limbs or overcoming other physical and mental handicaps.

Of 1,000 men who have passed through this center, about 500 have returned to former jobs or other suitable occupations; many of the others have entered governmental or other establishment for further training. While in residence the men receive free board and lodging and allowances irrespective of their pensions.

Congenital Defects Following Rubella in Pregnancy

Only a few years ago an Australian ophthalmologist, N. M. Gregg (*Tr. Ophth. Soc. Australia* **3**:35, 1941) first drew attention to cataract and other congenital deformities following rubella during pregnancy. He reported 78 cases of congenital cataract in babies born between December 1939 and January 1941 in which the mothers, with few exceptions, had suffered in the early months of pregnancy from an exanthem diagnosed as rubella. In at least 44 of the infants there was also a congenital lesion of the heart. The cataract was of a peculiar type which differs from other congenital types. Gregg's observations have been confirmed by other Australian observers. In America A. B. Reese (*Am. J. Ophth.* **27**:483 [May] 1944) reported 3 cases. In Britain R. E. Hope Simpson (*Lancet* **1**:483 [April 8] 1944) reported 3 cases. A case has recently been reported to the Section of Obstetrics of the Royal Society of Medicine by Ivor Hughes.

Mr. Ivor Hughes pointed out that the pathology of such cases is obscure. It has been suggested that the filtrable virus of rubella passes through the barrier of the chorionic villi at a time when lens and septum formation are occurring (sixth to eighth weeks of pregnancy), resulting in ocular and vascular lesions. Therefore the percentage of congenital lesions is higher if rubella is contracted during the first three months of pregnancy. It has been suggested that it would be justifiable to terminate pregnancy when the occurrence of rubella is proved. Mr. Hughes does not agree, as the percentage of cases of rubella in which fetal defects follow is not known, since only positive cases have been recorded. It seems curious that these congenital lesions should be traced to the mildest of the exanthems while none have been observed to follow the more common and more severe infections of measles and scarlet fever. Have sequels of these later diseases been overlooked? The congenital lesions of syphilis are analogous to those due to rubella. This relationship might long have remained unobserved but for the genius of Hutchinson.

ITALY

(From Our Regular Correspondent)

Dec. 31, 1945.

Society of Experimental Biology

The Società Italiana di biologia sperimentale, which did not function during the war, was recently reorganized. Dr. Gaetano Quagliarello, professor of biologic chemistry at Naples University, was appointed president. Branches of the society in Naples, Florence, Rome, Milan and Turin were also reorganized. Dr. Nello Beccari, professor of comparative anatomy at the Florence University is the president of the branch in Florence. The attendance at meetings has been both distinguished and large, indicating the zeal with which the medical profession is trying to make up for the lack of progress during the war. In the meetings of the society recently held a number of papers were read. Tarantino discussed relations between histidine metabolism and the development of bacteria. Pasquinelli reported results of experiments on histidine metabolism in the remaining hyperplastic testis of a guinea pig after removal of one testis. The acuteness of histidine oxidation is proportional to the percentage of cells which undergo karyokinesis in the testis. The speaker believes that histidine is used by the cells during the process of hyperplasia. Donatelli discussed the influence of sex and age on acute mercury poisoning, which he observed in 60 cases. The death rate was 83.8 per cent for men and 37.9 per cent for women. It was higher in children, adolescents and old persons than in young and mature adults. The data were confirmed by experiments on guinea pigs and rats in which the male animals were more resistant than female animals to mercury poisoning. That the greater resistance of males is due to testicular hormones was proved by the fact that the resistance to mercury poisoning in males after castration is as low as that of females. The administration of synthetic testicular hormones to females increases the resistance of the latter to a level equal to that of normal males. Tarantino found by in vitro experiments (Warburg) that the filtrates of cultures of a strain of penicillin which had strong bacteriostatic power prevented consumption of oxygen by Staphylococcus pyogenes aureus. The process of dehydrogenation and the glycolytic metabolism of the same species of bacteria was not altered. Agonistic effects between substances of the penicillin and sulfonamide (aminobenzaldehyde) groups do not seem to exist.

Care of Orphans of Physicians

The care of orphans of Italian physicians who were killed in the war has been in charge of a national committee of which Dr. Siro Fada, the general director of national public health, was president. The committee cared for the orphans until September 1945, although its functions should have ceased in December 1942, according to the original plan. Dr. Fada recently reported to the Ministry of War on the work of the committee. The amount of money collected for this purpose is insufficient. The members of the committee agreed to turn over the remaining funds to the central Opera Nazionale for the care of these orphans. All Italian physicians contribute a monthly sum.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, Feb. 9, 1946.

Diphtheria Investigations

The campaign against diphtheria is gaining impetus in the large cities of Brazil, mainly through the use of active immunization. Drs. Maria C. de Andrade and Jandyra P. do Amaral of the Division of Bacteriology of the Butantan Institute of São Paulo have recently completed an investigation to ascertain the rate of diphtheria carriers among the school children of the city of São Paulo and to determine if the increase in the number of children immunized in recent years is correlated with a reduction in the rate of carriers in this population group. In the public schools 108,952 children have been immunized with three doses of fluid diphtheria toxoid, and 9,891 more have had incomplete immunization. The authors examined 3,071 children from different sections of the city, culturing material from the throat and nose. All cultures considered negative were tested for the fermentation of carbohydrates, for hemolytic power, for virulence and for toxigenic power.

Fifty-eight among the 3,071 children presented positive cultures for the diphtheria bacillus, or 1.88 per cent, a figure that can be contrasted to that of 3.7 per cent obtained by Castro Simões in 1921 in the examination of 1,054 public school children of the same city. The long interval between the two investigations excludes a definite conclusion in favor of a reduction of the rate of carriers, as several epidemiologic factors may have acted to influence the results. The difference between the rate of carriers among the vaccinated children (15 out of 1,072, or 1.40 per cent), and the nonvaccinated (43 out of 1,870, or 2.30 per cent) is not statistically significant, as the authors have pointed out. Nor is there a significant difference between the rate for white (47 carriers in 2,531 children, or 2.85 per cent) and for colored children (11 carriers in 540 children, or 2.04 per cent). It is important to point out that, of these 58 positive cultures, only 1 was of a virulent type and only 9 were toxigenic. If the rate is calculated on the basis of 1 virulent sample, the rate would be reduced to 0.32 per cent.

Hypertension and Pregnancy

Dr. S. Oliveira de Barros and Dr. Justino O. Castro, obstetricians of the Vila Mariana District Health Center, city of São Paulo, have reported several interesting features of 217 cases of hypertension observed among 1,754 pregnancies at the center. The authors decided to use the value 125 mm. as an average systolic pressure based on Brazilian experience; this figure is a little higher than the American value of 120 mm., as suggested by De Lee. They used the value 155 mm. to establish the lower limit of what they call "marked" hypertension, in contrast to "slight" hypertension for the cases with values below 155 mm. They also classify the cases into "acute" and "chronic," using for this distinction the arbitrary limit of the fifth month of pregnancy, based on the assumption that, in the majority of the cases, the hypertension observed in the first months denotes renovascular sclerosis preexistent to the pregnancy, while the pressure change developed from the fifth month on is primarily connected with the pregnancy itself. In the 217 cases the hypertension has been classified as "slight" in 164 (75.6 per cent) and "marked" in 53 (24.4 per cent). In 165 of the cases 68, or 41.2 per cent, have been considered acute and 97, or 58.8 per cent, chronic. In 15 of the cases in which the authors were able to observe one or more subsequent pregnancies, all of them showed the tendency to present higher values for the blood pressure during the later months of gestation.

Cesarean Section and Fertility

Dr. C. Correa la Costa, director of the Arthur Bernardes Maternity Hospital, studied 188 cases of cesarean section performed in previous years in several hospitals of Rio de Janeiro. At the time of the operation 7 patients were between 15 and 19 years of age, 127 between 20 and 29, 50 between 30 and 39 and 4 40 or more. The frequency distribution of the number of pregnancies the women had had before the cesarean section was none in 141 cases, one pregnancy in 25 cases, two or three pregnancies in 12 cases, four or five pregnancies in 5 cases and six or more pregnancies in 5 cases. After the cesarean section 108 women of the 188 have again conceived one or more times (57.4 per cent of fertile cases) and 80, or 42.6 per cent, have been sterile. Of the 80 women included in the sterile group, 2 died as a consequence of the cesarean section, 2 were subjected to ligation of the oviducts and 1 was subjected to hysterectomy. It was ascertained that, among 80 sterile women after the operation, 38 used contraception. There were 28 cases of postoperational sterility, or 32.5 per cent, studied two to three years after cesarean section. Of 46 cases after a four to five year interval there were 10 cases of postoperational sterility, or 21.7 per cent. Of 56 cases in which the interval was six or more years there were 3 cases of postoperational sterility, or 5.3 per cent. Dr. Costa points out that the sterility rate diminished as the time interval between the operation and the investigation increased. These figures indicate that cesarean section does not lead to loss of fertility.

Personal

Admiral Oswaldo Palhares of the Brazilian Navy Medical Corps has been appointed surgeon general of the corps, succeeding Admiral Fabio de Vasconcellos, who had occupied the post since October 1943. Admiral Palhares has announced his general policy, which includes the creation of the Navy Medical School.

Dr. James A. de Tomasi, professor at Cornell University, is spending some time in Brazil, making studies of biology in the cities of Ouro Preto, Diamantina, Sabará and Congonhas, all in the state of Minas Gerais.

Marriages

RANDOLPH ARMISTEAD CATE, Nashville, Tenn., to Miss Marcella Shinnick of Thompson, N. D., at Fort Lewis, Wash., December 31.

JOHN W. JANSONIUS, Eldora, Iowa, to Miss Fern Maria Rippee of Hartville, Mo., in Bloomington, Ind., December 23.

RICHARD GEORGE WHITING, Medford, Mass., to Miss Christine Rosemary Wilson of London, England, January 14.

WILLIAM DUER JAMES JR., Hamlet, N. C., to Miss Sara Brooks Nair of Clifton Forge, Va., January 29.

JAMES FRANKLIN LAND, Youngstown, Ohio to Miss Elizabeth Jane Morrison of Kokomo, Ind., December 29.

HERMAN PEPPER to DR. GENEVIEVE ELLEN GAARD, both of Redwood City, Calif., in Seattle, February 8.

HUGH DORTCH JR. to Miss Mae Joyce Whitfield, both of Durham, N. C., February 2.

RICHARD R. BOBB, Lykens, Pa., to Miss Elma Faye Knorr at Paxtang, January 18.

Correspondence

SALICYLATE-INDUCED HYPOPROTHROMBINEMIA

To the Editor:—The communication from Lieutenant Colonel Higley in THE JOURNAL, Dec. 15, 1945, page 1123, concerning the clinical significance of salicylate-induced hypoprothrombinemia, prompts the following comments.

According to Shapiro (Studies on Prothrombin: VI. The Effect of Synthetic Vitamin K on the Prothrombinopenia Induced by Salicylate in Man, THE JOURNAL, June 24, 1944, p. 546) "there are no fixed levels of prothrombinopenia at which bleeding is known to be established." Therefore a prolongation of the prothrombin time from 14 to 20 seconds may well constitute a "dangerous disturbance." Various statements from authoritative sources reflect the concern—which Dr. Higley apparently does not share—in professional circles here and abroad with respect to the possibility of salicylate-induced hypoprothrombinemia being a factor in the causation of hemorrhages. For instance, THE JOURNAL saw fit to caution in an editorial (Is Aspirin a Dangerous Drug? March 18, 1944, p. 777) that patients "who are to receive large doses for a long time may appropriately be given vitamin K." Similarly, Fashena and Walker (Salicylate Intoxication: Studies on the Effects of Sodium Salicylate on Prothrombin Time and Alkali Reserve, *Am. J. Dis. Child.* **68**:369 [Dec.] 1944) state, with reference to salicylate therapy in children, that "the concomitant administration of vitamin K is indicated." Another editorial in THE JOURNAL (Hazards in the Salicylate Treatment of Rheumatic Fever, Feb. 24, 1945, p. 460) contains the statement:

> Rheumatic fever often is accompanied by a widespread vascular damage, thus increasing the hazards of hemorrhagic complications after salicylate administration. When adequate amounts of vitamin K are given with salicylates, much of the danger of these complications may be prevented. Possible hazards in the administration of salicylates should be remembered, so that unnecessary dangers may be avoided.

And in an editorial of the *British Medical Journal* (Toxicity of Salicylates, July 7, 1945, p. 19) we read "The danger from diminished prothrombin can fortunately be removed by the simple expedient of giving the patient vitamin K or a related substance such as menaphthone (B. P.). . . . No doubt the regular use of menaphthone together with salicylates will gradually become established." Similarly the *Lancet* contains the following statement under Annotations (Salicylates and Hemorrhage, Oct. 2, 1943, p. 419): "There seem to be good grounds for giving vitamin K . . . prophylactically to patients having large and continued doses of salicylates."

Indeed, precautionary measures in this direction are warranted since even fatalities have been reported in which salicylates appeared to be the lethal factor. For instance, Ashworth and McKenzie (Hemorrhagic Complications, with Death Probably from Salicylate Therapy, THE JOURNAL, Nov. 25, 1944, p. 806) have observed two deaths from extensive hemorrhages, particularly involving the brain, following administration of large doses of salicylate. Autopsy findings suggested as probable cause of the fatal outcome "a combination of capillary damage and hypoprothrombinemia produced by the salicylates."

Troll and Menten (Salicylate Poisoning, Report of 4 Cases, *Am. J. Dis. Child.* **69**:37 [Jan.] 1945) have reported three fatalities out of 4 cases of salicylate poisoning. In their cases, too, autopsy revealed widespread capillary hemorrhages.

While the number of those who take salicylates with impunity may be legion, reports as the aforementioned indicate that the prevention of prothrombinopenia by concomitant vitamin K administration may make the difference between life and death in some cases.

Lieutenant Colonel Higley takes exception to an article by Capt. Rudolf Singer (Acetylsalicylic Acid—A Probable Cause for Secondary Post-Tonsillectomy Hemorrhage: A Preliminary Report, *Arch. Otolaryng.* **42**:19 [July] 1945), who on the basis of clinical observation concluded that the prothrombinopenic effect of salicylates "seems to be a plausible explanation for the occurrence of secondary post-tonsillectomy hemorrhages."

My report Late Secondary Tonsillar Hemorrhage: I. Studies of Prothrombin and Vitamin K (*Arch. Otolaryng.* **42**:14 [July] 1945) seemingly escaped the attention of Lieutenant Colonel Higley. In studies conducted at the Pharyngology Research Laboratory, Department of Otolaryngology, Columbia University College of Physicians and Surgeons and Presbyterian Hospital, we were able to prove that a hypoprothrombinemic state induced by salicylate medication is one of the most important factors in the etiology of secondary tonsillar hemorrhage; furthermore, that by using a vitamin K preparation such as Synkayvite in conjunction with acetylsalicylic acid, the prothrombin-lowering effect of the latter was rendered ineffectual and that this was followed by a decidedly decreased bleeding incidence.

It is noteworthy that these two communications, Singer's and mine, appeared in the same issue of the *Archives of Otolaryngology* and that they were abstracted in the same issue of THE JOURNAL.

The study of drug-induced prothrombinopenias has been taken up only recently and, to be sure, the evaluation of the clinical significance of some of the observations awaits further investigation.

Nevertheless, as a worker in the field, I have had adequate experience to be convinced that salicylate-induced hypoprothrombinemia is of definite clinical importance. I should like to state my opinion that the prevention of such prothrombinopenia by administration of vitamin K in conjunction with acetylsalicylic acid, as suggested by THE JOURNAL, the *Lancet* and the *British Medical Journal*, is indeed warranted.

HARRY NEIVERT, M.D., New York.

TREATMENT OF BLACK WIDOW SPIDER BITE

To the Editor:—In relation to the observations made by Drs. Bell and Boone in THE JOURNAL, Dec. 8, 1945 related to black widow spider bites, I wish to state the following:

Here, among us, there has been, for many years, a way of combating the intoxication caused by the sting or bite of the scorpion, spiders such as the black widow, and certain other intoxications caused by the bite or sting of other animals or insects not always readily discovered, by means of injections of a 10 per cent aqueous solution of magnesium or sodium thiosulfate as described in the National Formulary VII.

The only caution required in a treatment of this nature is the application of successive doses until symptoms of intoxication disappear permanently. Apparently there is a neutralization of the toxins in a direct manner by means of the thiosulfate ions. As we are never able to know in such cases the toxic dose injected by the animal or the degree of toxicity of the substance injected, care must be exercised to repeat successive doses until permanent disappearance of toxic symptoms.

M. A. PULIDO, M.D., Guadalajara, Mexico.

To the Editor:—The article on page 1016 of THE JOURNAL, Dec. 8, 1945, exemplifies a lack of knowledge concerning the dynamics of action of Latrodectus mactans toxin. The toxic action mimics overdosages from strychnine, physostigmine and neostigmine. The treatment of choice, as far as drugs are concerned, is to use curare or drugs with a curare-like action. The extreme pain and myotonia may be relieved in five minutes, not six and one-half hours, by the intramuscular or intravenous use of a sterile 25 per cent solution of magnesium sulfate.

P. L. DAVIS, M.D., East Orange, N. J.

Bureau of Investigation

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D.D.N.J. and foods, F.N.J. The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the date of shipment; (4) the composition; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment.]

Cruez Herb Douche, Cruez No. 9 Herb Tea and Cruez No. 10 Herb Tea.—St. Clair Herb Company, East St. Louis, Ill. Shipped Oct. 17, 19 and 24, 1942. Composition: Douche—essentially a small amount of ferric sulfate and lesser amounts of compounds of magnesium and calcium, unnamed plant extractives and water; No. 9 Herb Tea—chiefly small amounts of extracts of plant drugs, salicylic acid and water; No. 10 Herb Tea—essentially small proportions of plant drug extracts, salicylic acid and water. Douche declared misbranded because label falsely represented it as efficacious to build health and cure or prevent infections and growths of the female organs. Cruez No. 9 Herb Tea and Cruez No. 10 Herb Tea misbranded because falsely represented to cure or prevent gout, rheumatism, impaired sexual vigor and disorders of the blood, kidneys and bladder.—[*D. D. N. J., F. D. C. 934; October 1944.*]

Mennen Antiseptic Oil.—Mennen Company, Newark, N. J. Shipped Feb. 16, 1942. Composition: a yellow, perfumed, saponifiable oil containing small amounts of hydroxyquinoline, chlorobutanol, hydroquinone and benzoic acid. Misbranded because of these false and misleading label claims, among others: "It has equal antiseptic and germicidal powers to the commonly used ammoniated mercury ointments. . . . Meets the widespread demand of hospitals, physicians, nurses and mothers . . . offers protection against infection."—[*D. D. N. J., F. D. C. 926; October 1944.*]

Paracelsus.—American Biochemical Corporation, Cleveland. Shipped May 22, 1942. Composition: chiefly potassium chloride, sodium phosphate, chloride and bicarbonate, magnesium sulfate, calcium lactate and lesser amounts of other chemical salts. Misbranded because of false label representations regarding mineral content and efficacy as a dietary supplement, a body builder, a tonic and a remedy for disorders due to dietary deficiencies, particularly in minerals; also because recommended for arthritis, neuritis, influenza and phlebitis.—[*D. D. N. J., F. D. C. 925; October 1944.*]

Presto for Blackheads (Presto Stick).—McJohn Cosmetic Company, Hollywood, Calif. Shipped July 21, 1942. Composition: essentially ground pumice and titanium dioxide, in a hydrated waxy base. Misbranded because falsely represented on label to remove blackheads.—[*D. D. N. J., F. D. C. 942; October 1944.*]

SNL (Suffer No Longer).—Mrs. Cora Lee Wiley, doing business as the SNL Company, Adel, Ga. Shipped May 27 and July 19, 1941. Composition: essentially iodine, boric acid, organic silver compound, iodide, sulfate, and a small amount of a magnesium compound, with alcohol, glycerin and water. Misbranded because label falsely represented that SNL would, among other things, relieve female and abdominal troubles, protect women against every germ, including that of tuberculosis, and enable the user to build health, happiness, strength and beauty and increase length of life.—[*D. D. N. J., F. D. C. 932; October 1944.*]

Tritolac.—Thomas E. Collins Company, San Francisco. Shipped July 15, 1940. Composition: essentially embryonic tissues closely resembling wheat germ, with something similar to spray-dried skim milk, and an appreciable amount of wheat bran particles. Misbranded because label falsely represented that product would cure or prevent disease, stimulate run-down or nervous persons, help to correct functional and degenerative changes in the entire nervous system and similar changes in the body organs and tissues, and benefit some other disorders.—[*D. D. N. J., F. D. C. 929; October 1944.*]

Tuberculosis Compound.—Emile Carpentier, trading as Dr. Emile Carpentier, N.D., Hillsdale, N. J. Shipped Oct. 1, 1941. Composition: essentially plant material, sugars, a fatty substance and water. Misbranded because of false and misleading label representations that product would cure in from six weeks to six months tuberculosis in various parts of the body as well as many other disorders, and contained tested exhilarating and vitalizing herbs, roots and ingredients which would eliminate the germs ("bugs") of tuberculosis. Following a verdict of guilty by a jury in the district federal court of New Jersey, Carpentier was sentenced to a year in the custody of the Attorney-General, but sentence was suspended and defendant was placed on probation for five years.—[*D. D. N. J., F. D. C. 931; October 1944.*] In 1933 and 1940 the Post Office Department debarred from the mails the fraudulent "consumption cure" business that Carpentier had operated under various names, including those of himself and his wife. In 1938 he was fined $15,000 in a federal court for defying an order of the Federal Trade Commission to cease representing that the "T. B. Compound" put out under his name had therapeutic value.

Vita Malt with Natura Calcium Compound.—Natura Remedy Company, Los Angeles. Shipped May 23, 1941. Composition: Vita Malt, essentially a malt extract, with small amounts of saponifiable oils, water and sodium benzoate; Natura Calcium Compound, sodium bicarbonate and calcium salts. Vita Malt misbranded because label falsely represented that product would reduce body weight and benefit a variety of disorders, such as anemia, nervousness, sleeplessness, glandular disturbances, lack of appetite, infections and arthritis. Natura Calcium Compound misbranded because represented as effective in treating colds and la grippe.—[*D. D. N. J., F. D. C. 945; October 1944.*] Vita Malt also misbranded under the provisions of the law applicable to foods, as reported in *F. N. J. 5788.*

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Opticians' Practice Act (Connecticut): Application to Operation of Optical Store Not under Supervision of Licensed Optician and Filling Prescriptions of Licensed Physicians.—Chapter 161a, General Statutes, Connecticut, Cumulative Supplement, 1935, provides for the regulation of opticians and optical establishments. Section 1161c of that chapter reads as follows:

> No optical glasses or kindred products or other instruments to aid vision shall be sold at retail except under the supervision of a licensed optician and in a licensed optical establishment, office or store. Any optical establishment, office or store, not under the supervision of a licensed optician, may sell eyeglasses upon a permit from said commission to so sell, provided such permit shall specify the articles which may be sold. Said commission shall have the power to issue such a permit.

The defendant conducted an optical retail store without the supervision of a licensed optician, nor did he possess a permit from the commission of opticians (the licensing agency created by the chapter just referred to) as apparently required by the section quoted. He operated, so he claimed, by selling "optical instruments" at retail only on the prescription of a licensed physician in his employ. Neither he nor any person in his employ, other than the licensed physician, attempted to measure the vision of the eye. He was convicted on an information that charged in three counts violation of the section quoted. The first count charged that he conducted an optical store without a permit; the second, that he conducted the store without the supervision of a licensed optician; and third, that he sold optical instruments at retail in violation of the section. He appealed to the Supreme Court of Errors of Connecticut.

The defendant claimed (1) that the statute for the violation of which he was convicted was invalid and (2) that he did not violate that section because he sold only on the prescription of his physician employee and did not attempt to measure vision. The defendant's claim, said the Supreme Court of Errors, that he did not violate the statute may be stated broadly to be that chapter 161a, supra, exempts optometrists from its provisions and that chapter 161, supra, relating to optometrists, excepts physicians from its provisions, and hence the optical instruments sold on the prescription of a licensed physician employed by him, with no attempt on the part of the defendant to measure vision of the eye, did not constitute a violation of the statute quoted. The short answer to this claim is that physicians prescribe and opticians fill prescriptions and that chapter 161a (the opticians' practice act) for the violation of a section of which he was convicted relates to the filling of prescriptions and not to the making of them. One of the statutory definitions of an optician is "one . . . skilled in the technique of producing and reproducing ophthalmic lenses and kindred products and mounting the same to supporting materials" (section 1175c). Such mechanical skill is not required of a physician nor is it a tenable claim that the legislature presumed that a physician would have such skill. It is apparent that the supervision of a physician in the defendant's store did not comply with the provision of the statute quoted requiring the supervision of a licensed optician.

The first count of the information charged the defendant with conducting an optical store without a permit from the commis-

sion of opticians. Admittedly, said the court, the defendant sold optical instruments without a store permit. He claimed, however, that that part of the statute quoted requiring a store permit is unconstitutional as an unlawful attempt to delegate power to the commission of opticians. Section 1167c (a section of the opticians' practice act) gives the commission authority to make regulations concerning the granting of permits to optical departments. Section 1162c provides that the commission shall grant permits "upon satisfactory evidence to said commission that such . . . store is being conducted in accordance with the regulations of said commission." The only suggestion as to the character of such regulations is that they must not be inconsistent with law and must be in keeping with the provisions of chapter 161a. Nowhere in the chapter are there any provisions as to the method of conducting the business which would limit the regulations. No sufficient guide for the exercise of the discretion reposed in the commission has been set up. No standards for the issuance of permits have been specified. As was said in *State* v. *Stoddard*, 126 Conn. 623, 13 A. (2d) 586:

> A legislature, in creating a law complete in itself and designed to accomplish a particular purpose, may expressly authorize an administrative agency to fill up the details by prescribing rules and regulations for the operation and enforcement of the law. In order to render admissible such delegation of legislative power, however, it is necessary that the statute declare a legislative policy, establish primary standards for carrying it out, or lay down an intelligible principle to which the administrative officer or body must conform, with a proper regard for the protection of the public interests and with such degree of certainty as the nature of the case permits, and enjoin a procedure under which, by appeal or otherwise, both public interests and private rights shall have due consideration.

The necessary standards on which the commission is to base its regulations as to the suitability of optical establishments entitling them to a permit are not established by chapter 161a. The court accordingly held that the provisions of the statute quoted with respect to store permits are invalid.

The second and third count of the information under which the defendant was convicted charged that he had conducted his store without the supervision of a licensed optometrist and that he had sold optical instruments at retail in violation of the section quoted. The defendant claimed, in this respect, that there was no adequate provision made in the opticians' practice act for the licensing of opticians and that therefore the absence of a licensed optician in his store would not subject him to criminal prosecution. The preliminary requirements in the opticians' practice act, said the court of errors, with respect to examining applicants for a license to practice as opticians are reasonably certain. Section 1164c provides that no person shall be admitted to take an examination until he shall have satisfied the commission that he is 21 or more years of age, is of good moral character and has had four years' practical experience in the business, or the equivalent in a reputable college of opticians from which he has received a diploma. The section, however, purports to deal with two classes: those already engaged in the occupation of optician at the time of the passage of the act, and others. This distinction was apparently overlooked in providing for an examination, for the final sentence in the section requires as a condition precedent to the granting of a license that "application for such license shall be made to the commission, together with satisfactory proof of such knowledge, skill, technique and ability on or before March 1, 1936." As the section reads, no person may be granted a license without compliance with the requirement. The effect of this, restricting as it does the granting of licenses to persons possessing the requisite qualifications applying before March 1, 1936, was obviously not that intended by the legislature. A legislative intention, not expressed in some appropriate manner, has no legal existence. We are not at liberty to speculate on any supposed actual intention of the legislature, which can be shown only by its vote. Reasonable certainty is a prime requisite in a statute and its absence invalidates the statute. This rule is of greater insistence when a criminal prosecution, as here, is involved. In the opinion of the court this section in this respect was invalid for uncertainty.

The judgment of conviction was set aside and the cause was remanded to the lower court with direction that the defendant be acquitted.—*State* v. *Van Keegan, 42 A. (2d) 352 (Conn., 1945).*

Hospitals: Nursing Home Not Hospital Under Hospitalization Policy.—The plaintiff and his wife sued to recover for hospital expenses incurred by the wife, the suit being based on a policy of hospitalization insurance issued by the defendant insurance company. From a judgment in favor of the plaintiff, the defendant appealed to the court of civil appeals of Texas.

The plaintiffs alleged that Mrs. Givens, after vainly seeking admission to a regular hospital in Los Angeles, was admitted, through the request of a Dr. Wilson, to the nursing home of Mrs. Daisy Wharton in the same city. At the time of her admission to the nursing home she possessed a hospitalization policy issued by the defendant which apparently agreed to remunerate her for certain hospital expenses which she might incur. It was stipulated that the word "hospital" as used in the policy, meant

> an institution conducted for the regular reception and treatment of the sick, rendering services and facilities commonly and generally recognized and accepted as hospital services and facilities, but shall not include facilities provided in a doctor's office or clinic used merely in the routine treatment of patients and not generally recognized as hospital facilities.

Mrs. Givens testified that while she was in the nursing home she was regularly visited and treated by her physician and that the nursing care included private room, bedside attention, special diet and meals. She testified further that she had been a patient at Baylor Hospital, Dallas, Texas, prior to this time and afterward at St. Paul's Sanitarium, with the same ailment, and was rendered the same service as was afforded at the nursing home. Mrs. Givens admitted on cross examination, however, that she could think of no facilities or services which she received at the nursing home but would not have received in her own home if she had hired a private nurse to take care of her there. Mrs. Wharton testified that she was a private nurse, that the nursing home was her private home and that hospitals were not permitted in the residential section of Los Angeles where she lived; that her establishment was in no sense a hospital, sanitarium or sanatorium; that her nurses' home would not qualify as a hospital in that it did not have any of the following facilities usually found in hospitals: x-ray equipment, laboratory equipment, sterilization rooms, operating rooms, and drug and chemical laboratories and dispensaries.

The court of appeals said that the contract between the parties provided for the furnishing of services by a hospital, held that the terms of the policy were not ambiguous in defining a hospital, and concluded that the nursing home of Mrs. Wharton was not such an institution. Accordingly the judgment in favor of the plaintiffs was reversed.—*Employers Casualty Co. v. Givens et ux, 190 S. W. (2d) 155 (Texas, 1945).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, March 9, page 668.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Part III. Various Centers, March. Exec. Sec., Mr. E. S. Elwood, 225 S. Fifteenth St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* New York, Oct. 9-14. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF INTERNAL MEDICINE: San Francisco, June 27-29. Final date for filing application is April 15. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Oral.* Chicago, May 5-12. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, May 22-25. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City, Ia.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, March 22. *Oral.* Cleveland, April 27-28 and San Francisco, July 1-5. Sec., Dr. Lee F. Hill, 3309 Forest Ave., Des Moines, Ia.

AMERICAN BOARD OF RADIOLOGY: Chicago, Nov. 27 to Dec. 1. Final date for filing application is Sept. 1. Sec., Dr. B. R. Kirklin, Mayo Clinic, Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written. Part I.* Various centers, October. Final date for filing application is July 1. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia 2.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February 1947. Final date for filing application is Nov. 15. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

210:701-832 (Dec.) 1945

Convalescence from Surgical Procedures: I. Studies of the Circulation Lying and Standing, of Tremor and of a Program of Bed Exercises and Early Rising. I. Starr and R. L. Mayock.—p. 701.
Id.: II. Studies of Various Physiologic Responses to Mild Exercise Test. I. Starr and R. L. Mayock.—p. 713.
*Coarctation and Acute Dissection of Aorta Associated with Pregnancy. T. D. Kinney, R. E. Sylvester and S. A. Levine.—p. 725.
Combined Acute Vascular Lesions of Brain and Heart: Clinical-Pathologic Study of 15 Cases. G. A. Race and J. R. Lisa.—p. 732.
Relationship Between Cells and Plasma in Cultures of Buffy Coat from Human Blood. G. Draper, Cynthia Pierce and C. W. Dupertuis.—p. 738.
Choriocarcinoma of Testicle. A. J. Gill, G. T. Caldwell and J. L. Goforth.—p. 745.
Hydrometrocolpos in Infancy—Cause of Urinary Retention, Intestinal Obstruction and Edema of Lower Extremities. P. Mooris.—p. 751.
*Use of Penicillinase in Cultures of Body Fluids Obtained from Patients Under Treatment with Penicillin. H. F. Dowling and H. L. Hirsh.—p. 756.
Incidence of Respiratory Infections Following Attack by Primary Atypical Pneumonia Is Unchanged. P. A. Lembcke and L. E. Young.—p. 762.
Infectious Mononucleosis: Analysis of 26 Clinical and 340 Subclinical Cases. R. Vander Meer, C. H. Lutterloh and Jean Pilot.—p. 765.
Comparison in Man of Sulfathiazole and 2-Sulfanilyl-3-5 Dihydrothiazole (Sulfathiazoline, Sulfahydrothiazole). H. F. Flippin, J. G. Reinhold, L. Schwartz and A. H. Comm.—p. 775.
*Treatment of Hyperthyroidism with Combination of Iodine, Thiourea in Small Doses, and Desiccated Thyroid. T. S. Danowski, Evelyn B. Man and A. W. Winkler.—p. 777.
Protest: Recorded Psychiatric Program. A. A. Rosner.—p. 782.
Uterine Bleeding and Extragenital Disturbances. I. L. Frank.—p. 787.
Congenital Hemolytic Anemia: Review of Progress. I. J. Wolman.—p. 798.

Coarctation of Aorta Associated with Pregnancy.—Kinney and his associates report the first instance in which a complete anatomic diagnosis was made antemortem in a case of this sort. A pregnant woman aged 23 died suddenly as the result of rupture of an acute dissection of a coarcted aorta into the pericardium. The onset of sudden severe pain in the throat and the back of the neck, which also involved the upper part of the back and the left arm, directed attention to the possibility of a vascular accident. The routine examination, which revealed absent femoral and abdominal pulsations, quickly focused attention on the possibility of coarctation of the aorta. This readily explained the basal systolic murmur and led the author to listen to the interscapular region, where the same murmur was audible. Confirmatory evidence was obtained when a pulsating artery was detected in the left midback, and blood pressure could not be measured in the legs. The clinical diagnosis was made even though the x-ray examination at first overlooked changes in the ribs. After the diagnosis of coarctation had been established, the explanation for the symptoms appeared to be rupture of the aorta.

Penicillinase in Body Fluids from Patients Being Treated with Penicillin.—Dowling and Hirsh investigated the effect of blood culture medium on penicillinase. They found that penicillinase does not lose its ability to neutralize penicillin when both substances are added to veal infusion broth and kept at incubator, room or refrigerator temperature for four weeks. In the concentrations in which it is used for this purpose, penicillinase has no inhibitory effect on the growth of bacteria. Among 26 patients from whom parallel cultures were taken, with and without penicillinase, the presence of penicillinase in the culture medium gave information on 12 patients which was not obtainable or which was delayed or doubtful when the culture was taken without the benefit of penicillinase. Among 186 specimens of body fluids obtained from patients under treatment with penicillin, cultured in parallel with and without penicillinase in the culture medium, 36 showed better growth in the medium containing penicillinase. It is recommended that penicillinase be used routinely in cultures of body fluids obtained from patients under treatment with penicillin.

Iodine, Thiourea and Desiccated Thyroid in Hyperthyroidism.—In the treatment of 12 patients with hyperthyroidism Danowski and his associates administered 5 to 15 drops daily of strong solution of iodine. After the remission with iodine therapy had reached its maximum, thiourea was started in doses varying between 0.05 and 0.28 Gm. once daily. Patients whose level of serum precipitable iodine fell below normal received 0.06 Gm. of desiccated thyroid daily as well. In some instances iodine medication was later discontinued. The serum precipitable iodine, the basal metabolic rate, the body weight, the pulse rate, erythrocyte and leukocyte counts, the size of the thyroid gland and the general clinical condition were carefully followed. Preliminary iodine medication diminished the severity of the hyperthyroidism for a time in most of the patients but failed to produce a complete and lasting remission. Administration of thiourea as well as iodine resulted in a complete disappearance of the signs of thyroid overactivity and depression of serum precipitable iodine to normal or subnormal in 11 out of 12 instances. In the patients who required and were given maintenance doses of desiccated thyroid the concentration of precipitable iodine in the serum promptly returned to normal. Evidently thiourea in daily doses of 0.280 Gm. can produce a satisfactory sustained remission in cases of hyperthyroidism which have previously been brought into partial remission by iodine medication alone. This fact disposes of any theory that previous treatment of the hyperthyroidism with iodine seriously interferes with the action of thiourea. Cases of toxic adenoma and of diffuse goiter both respond.

American J. Obstetrics and Gynecology, St. Louis

50:595-780 (Dec.) 1945

*Pathogenesis of Postsalpingectomy Endometriosis in Laparotomy Scars. J. A. Sampson.—p. 597.
Therapeutic Aspects of Uterotubal Insufflation in Sterility. I. C. Rubin.—p. 621.
*Sweat Gland Tumors of Vulva, Benign (Hidradenoma) and Malignant (Adenocarcinoma). E. Novak and R. R. Stevenson.—p. 641.
Ten Years of Cesarean Section at Boston Lying-In Hospital. F. C. Irving.—p. 660.
Review of Problem of Cancer of Cervix Since Use of Radium in 1912. B. M. Anspach.—p. 681.
*Curability of Granulosa Cell Tumors. G. E. S. Jones and R. W. Te Linde.—p. 691.
Diet Regulation and Controlled Weight in Pregnancy. W. J. Dieckmann, Dorothea F. Turner and Barbara A. Ruby.—p. 701.
Government and Maternal Welfare. F. L. Adair.—p. 713.
Rh Factor in Obstetrics. H. F. Traut, B. C. McIvor, J. Howard, S. P. Lucia and L. Charvet.—p. 722.
Surgical Correction of Congenital Aplasia of Vagina: Evaluation of Operative Procedures, End Result and Functional Activity of Transplanted Epithelium. N. F. Miller, J. R. Willson and J. Collins.—p. 735.
Hypertrophy of Uterus. A. H. Curtis.—p. 748.
Aneurysm of Splenic Artery with Rupture, a Rare Complication of Pregnancy. W. C. Danforth.—p. 753.
Search for Female Sex Hormones. R. T. Frank.—p. 757.
Role of Porro Cesarean Section in Modern Obstetrics. K. M. Wilson.—p. 761.
Ectopic Gestation. L. E. Burch and J. Seitchik.—p. 765.

Postsalpingectomy Endometriosis in Laparotomy Scars.—According to Sampson the pathogenesis of endometriosis in laparotomy scars depends on the type of the original operation and the anatomic conditions or relations resulting from it. The author has encountered 17 patients with laparotomy scar endometriosis in the gynecologic service of the Albany Hospital. In a case in which salpingectomy had not been done the scar endometriosis followed a myomectomy. The scar endometriosis was derived from the mucosa of a tubal stump by continuous invasion in 10 specimens. It probably arose in a similar manner in 3 others. In 2 additional specimens such an origin could not be excluded. Transplantation endo-

metriosis was possibly present in 3 scars. In the remaining 2 cases two separate foci of endometriosis were found in each scar, one of which arose by continuous invasion from the mucosa of a stump. The other possibly developed as a result of transplantation. The postsalpingectomy scar endometriosis has resulted from the outgrowth of sprouts of the mucosa of the tubal stump. These, as tubules, invade the tissues about the stump, usually the uterine cornu. From here they spread to the portion of the laparotomy scar attached to that cornu. Injecting the uterine cavity with colored gelatin has been helpful in the study of these cases, in 12 of which the uterine cavity was injected. Gelatin was found in the scar endometriosis in 8 of these, thus demonstrating the continuity of their tubules with the uterine cavity. The most dramatic demonstration of the value of the injection method in ascertaining the pathogenesis of postsalpingectomy scar endometriosis was the presence of gelatin in the tubules of a scar in which the only contact with the uterus was the remains of a drainage tract 7 cm. long. This specimen likewise showed the ability of müllerian tissue to extend itself by continuous growth and invasion for a long distance. The mucosa of the left tubal stump had grown out through the end of the stump into the lumen of the drainage tract, entirely lining it with columnar epithelium. The drainage tract ended, as such, at the base of the scar. Here sprouts had arisen from its mucosa and had invaded the scar actually to the skin epithelium. The total distance traveled by the continuous extension and invasion was 11 centimeters. The ectopic mucosa, which can be shown to have had its origin in the mucosa of a tubal stump and to have grown from it by continuous invasion, may not only retain the structure of the tubal mucosa but may also assume the structure and function of the uterine mucosa, including its reaction to menstruation and pregnancy, thus producing true endometriosis. Tubules play the more prominent role in some specimens of scar endometriosis, and glands in others; they are the leaders of the invasion. A tubule is a müllerian gland without appreciable stroma about it, and a gland is a müllerian tubule clothed in stroma.

Sweat Gland Tumors of Vulva.—Novak and Stevenson report 15 cases of sweat gland tumors of the vulva. These appear as small and innocent looking growths on or near the vulva, but to one not familiar with their microscopic appearance the microscopic picture is apt to be rather startling and perhaps lead to the diagnosis of adenocarcinoma. In only 1 case in the literature, that of Eichenberg, has there been unimpeachable evidence of malignant change, both clinical and microscopic. All other cases have been clinically benign and all have been cured by simple excision. It is possible that some instances of the rare primary adenocarcinoma of the vulva may be of sweat gland origin. Such an origin is difficult to establish. The ages of the patients with vulvar hidradenoma observed by the authors varied between 28 and 67 years. The most common location of the lesion is on the labia majora, and next most common is in the paralabial skin or perineum. In a few cases the growth has been situated on a labium minus. This is of interest, since many histologists believe that sweat glands are not normally found in the lesser labia. This may be true of the ordinary sweat glands, but one cannot be so sure as to glands of the apocrine type, which are rather closely related to sebaceous glands, of which there are enormous numbers in the labia minora. The authors suggest that the apocrine gland derivation of the vulvar sweat gland tumors may have been overemphasized. All of the 15 patients observed by them were white, in spite of the fact that a large proportion of clinic patients are Negroes. The lesion is always small, usually not over 1 cm. in diameter. There is no pain, and frequently the nodule is not noticed by the patient. There is considerable variation in the microscopic appearance of these hidradenomas.

Curability of Granulosa Cell Tumors.—Jones and Te Linde point out that the collection of adequate statistics on the malignancy of the granulosa cell tumor is difficult, as the incidence of late recurrence in this tumor group makes five or even ten year follow-up studies inadequate. This fact has been brought to the attention of the authors by the recent return of 3 patients, all having recurrent granulosa cell tumors fifteen, sixteen and nineteen years respectively after their original operation. All 3 patients have died eighteen, twenty and twenty-one years respectively following the removal of the primary tumor, in spite of the fact that the tumors were well encapsulated and showed no evidence of metastasis or implantation at the original operation. One case recurred in spite of a bilateral salpingo-oophorectomy and a hysterectomy. One case with widespread inoperable abdominal metastases responded well to high voltage x-ray therapy over a period of three years, but a subsequent recurrence of the growth proved refractory to treatment. Total urinary estrogen values were not extremely high in 2 cases but within the range of values for normal women. The values were well above those usually found in this laboratory for postmenopausal women, into which age group all 3 patients fell at the time of recurrence. All 3 cases exhibited clinical signs of estrogenic activity on recurrence of the tumor.

American Journal of Ophthalmology, Cincinnati

28:1309-1417 (Dec.) 1945

Dendritic Keratitis Associated with Chronic Malaria. R. D. Harley and R. F. Kaiser.—p. 1309.
Comparative Study of Bacteriologic Flora of Nasal and Nasopharyngeal Membranes of Patients with Certain Ocular Disorders. C. Berens and Edith L. N. Cumming.—p. 1313.
Allergic Retinosis J. W. Bettman.—p. 1323.
Statistical Analysis of 1,000 Consecutive New Eye Patients. A. De Rötth. —p 1329.
Method for Extraction of Dislocated Lenses from Vitreous. G. Bonaccolto.—p. 1335.
Restoration of Patency of Nasolacrimal Duct by Means of Vitallium Tube: Preliminary Report. W. E. Muldoon.—p. 1340.
Experiences with Surgery of Anophthalmic Orbit. A. G. DeVoe. —p. 1346.
Megalocornea. E. Rosen.—p. 1352.

American J. Orthodontics and Oral Surgery, St. Louis

31:597-752 (Dec.) 1945

Arrest of Hemorrhage in Two Hemophiliacs Following Dental Extractions. B. G. Anderson and G. A. Kentros.—p. 697.
*Experimental Chronic Fluorine Intoxication: Effect on Bones and Teeth. W. H. Bauer.—p. 700.
Chemotherapy in Oral Surgery. C. C. Bruno and S. Horoschak.—p. 720.
Prevention of Endodontal Pathosis. C. O. Dummett Sr.—p. 725.
Cancer of Oral Mucosa and Circumoral Areas. B. J. Masuda.—p. 730.
Cleft Palate Prosthesis: Treatment of Case with Hollow Ball Obturator. B. B. Cantor.—p. 740.
Case Reports: No. 94. Complete Luxation of Maxillary Anterior Teeth. M. A. Cashman.—p. 744.

Effect of Chronic Fluorine Intoxication on Bones and Teeth.—Bauer kept a bitch and puppies between the ages of 28 and 98 days on a fluorine diet. The bitch received 0.4 Gm. of sodium fluoride daily; some of the puppies were suckled by their fluorine poisoned mother, while others were fed mother's milk for four weeks and afterward received food containing 0.1 to 0.2 Gm. of sodium fluoride. Chronic fluorine intoxication of puppies produced extensive systemic changes in the bones and the developing teeth. The intensity depended on the age of the animal, the dose and the duration of the administration of sodium fluoride. Small doses of fluorine administered over a long time and started at an early age resulted in a dense periosteal bone formation. In puppies fed exclusively the milk of their fluorine poisoned mother, bone changes were observed prior to changes of the tooth buds. The cells of the periosteum were apparently stimulated to assume osteoblastic function even before the enamel forming cells were affected. That in these experiments changes in the bones and the developing teeth could not be prevented or alleviated by an antirachitic diet and that calcification of a startling amount of periosteal and endosteal bone occurred in spite of continued administration of fluorine suggest that the pathogenesis of the bone and tooth lesions in rickets and fluorosis differs. The enzymatic and protoplasmic action of fluorine produced rachitic-like changes in the bones and the dentin of puppies, but its effect on the bones of the older dogs and the enamel in general differed from rickets. These experimental studies and recent observations on dental fluorosis in children and adults associated with bone changes indicate the necessity of a thorough roentgenographic examination of the skeleton of children showing "mottled enamel" in fluorine areas in this country.

American Journal of Physiology, Baltimore

144:637-744 (Oct.) 1945

Effect of Decompression of Human Metabolism During and After Exercise. S. F. Cook and E. Strajman.—p. 637.
Effect of Varied Thiamine Intake on Growth of Rats in Tropical Environment. Ann O. Edison, R. H. Silber and D. M. Tennent.—p. 643.
Interrelations of Adrenal and Sex Glands in Parabiotic Rats. R. M. Pinto.—p. 652.
Effect of Isolated Posterior Pituitary Principles on Survival of Primitive Respiratory Center in Decapitated Rat Head. W. A. Hiestand and D. C. Brodie.—p. 658.
Metabolic Changes in Shock After Burns. H. N. Harkins and C. N. H. Long.—p. 661.
Effects of Hepatic Anoxia on Respiration of Liver Slices in Vitro. A. E. Wilhelmi, Jane A. Russell, F. L. Engel and C. N. H. Long.—p. 669.
Some Aspects of Nitrogen Metabolism of Liver Tissue from Rats in Hemorrhagic Shock. A. E. Wilhelmi, Jane A. Russell, Mildred G. Engel and C. N. H. Long.—p. 674.
Effects of Anoxia and Hemorrhage on Metabolism of Cerebral Cortex of Rat. A. E. Wilhelmi, Jane A. Russell, C. N. H. Long and Mildred G. Engel.—p. 683.
Action Potentials of Stomach. E. Bozler.—p. 693.
Effect of Thiocyanate on Gastric Potential and Secretion. W. S. Rehm and A. J. Enelow.—p. 701.
Streamline Flow in Arteries of Dog and Cat: Implications for Work of Heart and Kinetic Energy of Blood Flow. H. J. Ralston and A. N. Taylow.—p. 706.
Histamine-like Substance Present in Nasal Secretion of Common Cold and Allergic Rhinitis. Elizabeth Troescher-Elam, G. R. Ancona and W. J. Kerr.—p. 711.
Influence of Calcium Intake Level on Complete Life Cycle of Albino Rat. H. L. Campbell and H. C. Sherman.—p. 717.
Afferent Nerves Excited by Intestinal Distention. R. C. Herrin and W. J. Meek.—p. 720.
Observations on General Skin Temperature Responses to Local Heating of Human Subjects in Cold Environment. C. Martinez and M. B. Visscher.—p. 724.
Centripetal Regeneration of Eighth Cranial Nerve Root, with Systematic Restoration of Vestibular Reflexes. R. W. Sperry.—p. 735.
Effects of Thyroid Feeding, Thyroidectomy and Adrenalectomy on Thiourea Intoxication in Rats. D. Marine and Emil J. Baumann.—p. 742.

American Journal of Surgery, New York

70:275-418 (Dec.) 1945

Hemorrhage as Most Frequent Cause of Maternal Death: Analysis of Puerperal Deaths in Brooklyn, 1944. C. A. Gordon.—p. 277.
*Intravenous Obstetric Anesthesia: Preliminary Report. F. M. Allen.—p. 283.
Surgical Management of Femoral Vein Thrombosis. E. L. Lowenberg.—p. 291.
Simplification of Split Skin Grafting: Gum Acacia Technic. L. R. Rubin.—p. 302.
Control of Thyroid Storm. I. Schimmel.—p. 308.
Experimental Transmission of Lymphogranuloma Venereum Virus Through Placenta. H. Hellendall.—p. 320.
*Use of Thrombin (Topical) in Transurethral Resection of Prostate. C. G. Bandler, P. R. Roen and R. Stept.—p. 337.
Urinary Stress Incontinence in Female: Combined Gynourologic Approach to Correction. W. J. Reich, J. L. Wilkey and H. E. Silverman.—p. 341.
Phthalylsulfathiazole-Sulfathalidine: Clinical Evaluation in 122 Patients with Proctologic and Related Conditions. G. Angelo.—p. 354.
Method of Treatment for Pilonidal Sinus. J. K. Berman.—p. 360.
Refrigeration Anesthesia. D. W. Melick.—p. 364.
Treatment of Intertrochanteric Fractures of Femur. J. L. Posch and W. E. Abbott.—p. 369.
Newer Postoperative Trends. D. C. Daughtry.—p. 374.
Bicipital Tendovaginitis. I. W. Kaplan and B. L. Hawkins.—p. 383.

Intravenous Obstetric Anesthesia.—Allen's impression is that the infusion of procaine should usually not be begun in the earliest stage of labor. In the second stage, when contractions are stronger and the suffering greater, the analgesic effect is most welcome. With intravenous procaine infusions two grades of obstetric analgesia are obtainable, provided rare cases of hypersensitiveness are excluded by tests. Small dosage, not sufficient to cause dizziness or other subjective symptoms, can dull the pains especially during the second stage of labor. This effect is interpreted as being dependent wholly or chiefly on the peripheral nerves. It fails to give much relief during third stage delivery and subsequent repair operations. The advantages are the considerable alleviation of suffering with convenience and complete safety. Larger dosage, by an apparent central action, induces a state of dim consciousness in which the patient is more or less unresponsive but retains some awareness and memory of events. Touch sensations may persist, but anesthesia, in the sense of absence of pain, can be maintained during delivery and necessary operations. The only difficulty encountered thus far has been the occasional liability to convulsions. These have not been disastrous and can apparently be prevented by preliminary administration of barbiturates. The advantages are the convenient, flexible and rapidly controllable anesthesia, the noninterference with uterine contractions in the active stage and the almost immediate recovery without headache, nausea, disorientation or other after-effects. The apparent safety for both mother and child still requires confirmation by larger experience.

Thrombin (Topical) in Transurethral Resection of Prostate.—Bandler and his associates employed thrombin (topical) in 50 resections of the prostate for hypertrophy or carcinoma and have compared their results with 50 resections immediately preceding in which bladder irrigations were used in the postoperative management. Results with thrombin (topical) were very satisfactory. Postoperative bladder irrigations were completely eliminated. Postoperative bleeding was decreased in amount and duration. The inlying catheter could be removed earlier, and there were fewer postoperative hemorrhages when thrombin was employed than when irrigations were relied on in the postresection period. The use of 10,000 units was found to be more efficacious than the 5,000 unit preparation. There were no toxic effects nor other disadvantages in the use of thrombin.

American Review of Soviet Medicine, New York

3:97-192 (Dec.) 1945

Venereal Disease Control in U. S. S. R. L. N. Mashkilleison and V. A. Rakhmanov.—p. 100.
Bismuth in Treatment of Syphilis. N. S. Vedrov.—p. 106.
*Intracardiac Blood Transfusion. B. I. Iokhveds.—p. 116.
Struggle Against Malaria. P. Sergeyev.—p. 120.
Fulminant Type of Tertian Malaria. E. M. Tareyev, A. A. Gontayeva and S. S. Rotenburg.—p. 125.
Agglutination of Erythrocytes by Influenza Virus. A. K. Shubladze and V. D. Soloviev.—p. 130.
Agglutination of Erythrocytes by Grip (Influenza) Virus: Part II. V. D. Soloviev, A. K. Shubladze and N. I. Meltzer.—p. 134.
Subcutaneous Anavaccine VIEM for Dysentery. A. A. Klimentova.—p. 135.
Ixodidae Ticks of Western Siberia as Reservoirs of Tularemia. S. P. Karpov and V. M. Popov.—p. 140.
Problems of Wound Sepsis. I. G. Rufanov.—p. 143.
Agonal States and Clinical Death: Problems in Revival of Organisms. V. A. Negovski.—p. 147.

Intracardiac Blood Transfusion.—Iokhveds reports 2 cases of severe shock and massive hemorrhage in which isotonic solution of sodium chloride, glucose and blood were used for reviving intracardiac blood flow. The first patient was a Red Army soldier aged 34 to whom blood transfusion through a needle inserted into the right ventricle had restored consciousness. Severe myocardial damage was probably responsible for death that occurred two and a half hours later. In spite of the flabbiness of the myocardium, the needle, which was present in the heart for about fifteen minutes while the heart was contracting, had left only a minute puncture. The second patient, a soldier aged 18, was given an injection of blood and salt solution into the left ventricle. It was believed that the contracting force of the recently revived heart and the pressure of the solution being injected would be insufficient to overcome the resistance of the capillary network in the lungs, so that only insignificant amounts would reach the left side of the heart. Injection of these solutions directly into the left ventricle causes even the first and comparatively weak contractions of the heart to reestablish the blood supply to the vitally important brain centers, thus providing an antishock effect. In addition, the increased volume output of the left ventricle independently improved the coronary blood flow. The patient improved rapidly. The intracardiac injection was made eight to ten seconds after all clinical symptoms of death had appeared. When blood and other liquids are to be transfused into the right chamber, the needle should be inserted into the lower part of the fourth left intercostal space, one fingerbreadth from the left margin of the sternum. The left ventricle will be entered when the needle is inserted in the same interspace and 2.5 to 3.0 cm. to the left

of the left margin of the sternum. The needle should be 7.0 to 8.0 cm. long, its inner diameter 0.6 to 0.8 mm. If the initial 80 to 100 cc. of blood or other liquid is ineffective, further transfusion will be without effect.

Archives of Dermatology and Syphilology, Chicago

52:301-450 (Nov.-Dec.) 1945

*Carbohydrate Metabolism and Skin. E. Urbach and J. W. Lentz.—p. 301.
Epidermolysis Bullosa: Suggestion as to Possible Causation. M. N. Winer and J. M. Orman.—p. 317.
Acne Vulgaris Occurring in Tropics in Pigmentary and Pilosebaceous Nevus. H. V. Allington.—p. 322.
Effect of Endocrine Substances on Adult Human Scalp. H. R. Rony and S. J. Zakon.—p. 323.
Epidermodysplasia Hystricoidis Bullosa: Report of Case with Histopathologic Study. J. G. Reyes.—p. 328.
Dermatology in Army Station Hospital Serving in Italy. E. Ladany.—p. 335.
Fixed Bullous Eruption Due to Sulfathiazole. J. A. McGuire and B. Shaffer.—p. 342.
Treatment of Dermatoses with Vasodilators. F. R. Schmidt.—p. 344.
Pigmentation of Hair on Transplanted Skin in Hooded Rats. E. O. Butcher.—p. 347.
Lichen Sclerosus et Atrophicus in Childhood. C. W. Laymon.—p. 351.
Differentiation of Lepromatous from "Neural" Leprosy: Basis, Method and Report of 5 Cases. H. L. Arnold Jr.—p. 354.
Sandals and Hygiene and Infections of Feet. W. J. Nickerson, L. Irving and H. E. Mehmert.—p. 365.
Adrenal Glands in Pemphigus Vulgaris: Report of Six Autopsies and Review of Literature.—p. 369.
Cutaneous and Subcutaneous Lesions of Lower Limbs in Connection with Veins: Differential Diagnosis. M. Wolf.—p. 376.
Dermatitis Venenata Following Use of Penicillin Ointment. L. S. Markson.—p. 384.
New Cutaneous Bactericidal Agent Used in Soap: Further Practical Studies. E. F. Traub, C. A. Newhall and J. R. Fuller.—p. 385.
Dermatitis Medicamentosa Associated with Secondary Polycythemia: Report of Case. S. S. Robinson and S. Tasker.—p. 389.
Waterhouse-Friderichsen Syndrome: Report of Case. H. M. Johnson.—p. 391.
Colloidoclastic Shock Following Injection of Oxophenarsine Hydrochloride (Mapharsen): Report of Case. A. L. Shapiro.—p. 395.
Carbarsone in Treatment of Pemphigus: Preliminary Report. R. P. Little.—p. 397.

Carbohydrate Metabolism and the Skin.—Urbach and Lentz review the results of studies on patients with various skin diseases with and without diabetes and on various species of animals. While in human beings the free sugar content of the skin is only two thirds of that of the blood, the skin of many species of animals contains more free sugar than their blood. Therefore results obtained in investigations on animal skin are not applicable to conditions in human beings. The sugar level of the skin is dependent on the diet. This explains the efficacy of a low carbohydrate diet in diabetic dermatoses. A diet high in fat results in a distinct decrease in the sugar content of the skin, while that of the blood remains stationary. A blood sugar tolerance test is indispensable in order to determine whether or not a dermatosis is of diabetic origin. The type of curve indicates whether a pathologic reaction is brought on by excessive mobilization of dextrose by an imbalance in the sympathetic or the endocrine system or by a decrease in the capacity to assimilate sugar, i. e. by a lowered sugar tolerance, as in diabetes. In pancreatic diabetes the ratio between the fasting skin sugar and the blood sugar is increased. The sugar content of the skin is almost doubled after a sugar tolerance test. It takes the skin sugar level five hours or longer to return to normal. The prolonged storage of sugar in the skin may perhaps explain its great susceptibility to infection in diabetes. In mild diabetes with cutaneous manifestations the ratio of skin sugar to blood sugar is relatively high (65.7 per cent), whereas the ratio is rather low in cases without cutaneous symptoms. Extensive inflammation or infection of the skin can produce a metabolic disturbance of the carbohydrate metabolism which is of peripheral origin and in no way connected with pancreatic diabetes. These facts, together with the presence of cleavage and end products of the intermediary carbohydrate metabolism in the skin, as well as the presence of glycolytic enzymes and the fact that insulin-like substances can be derived from cutaneous tissue, would seem to underscore the important role played by the skin both in intermediary carbohydrate metabolism and as a storage organ.

Archives of Internal Medicine, Chicago

70:189-256 (Oct.) 1945

*Esophageal Lesions Associated with Acrosclerosis and Scleroderma. A. M. Olsen, P. A. O'Leary and B. R. Kirklin.—p. 189.
Neurologic Complications During Meningococcic Meningitis Treated with Sulfonamide Drugs. T. W. Farmer.—p. 201.
An Account of Stock. R. Fitz.—p. 210.
Absence of Electrocardiographic Changes in Tsutsugamushi Fever (Scrub Typhus): Report of 200 Consecutive Cases. W. L. Howell.—p. 217.
*South American Trypanosomiasis (Chagas' Disease). V. Moseley and H. Miller.—p. 219.
Sickle Cell Anemia in White Patients with Ulcers of Ankles: Report of 2 Cases. A. C. Woofter, W. S. Dick and W. L. Bierring.—p. 230.
Clinical Syndrome in Patients with Pulmonary Embolism. E. L. Sagall, J. Bornstein and L. Wolfe.—p. 234.
Blood: Review of Recent Literature. F. H. Bethell, C. C. Sturgis, R. W. Rundles and Muriel C. Meyers.—p. 239.

Esophageal Lesions Associated with Acrosclerosis and Scleroderma.—Olsen and his associates reviewed the records of all cases at the Mayo Clinic from 1930 to 1943 inclusive in which diagnoses of scleroderma or acrosclerosis had been made with respect to the occurrence of esophageal symptoms or signs. In 36 of approximately 350 cases of scleroderma or acrosclerosis dysphagia occurred or lesions of the esophagus were demonstrated. In approximately 10 per cent of these cases complaints referable to the esophagus were made. The most common complaint was dysphagia. Frequently there was also substernal burning after meals, especially when the patient was lying down. Positive roentgenographic or endoscopic evidence was demonstrated in 18 cases. Dilatation of the esophagus similar to that seen in cardiospasm was observed in 7 cases, and hiatal hernia with intrathoracic stomach was demonstrated in 9 cases. In 2 cases sclerodermic changes were demonstrated in the esophageal wall. In acrosclerosis symptoms of Raynaud's disease are present prior to the dermatologic changes or coincident with them. Thirty-three of the 36 patients who had esophageal symptoms presented the clinical syndrome of acrosclerosis. All the 18 patients for whom conclusive roentgenographic or endoscopic evidence was obtained had acrosclerosis. Sclerodermic changes in the connective tissues of the esophagus are chiefly responsible for the esophageal disturbances, which are extremely uncommon in Raynaud's disease per se. Reduction or absence of muscular activity in the wall of the esophagus and shortening of the esophagus apparently result from sclerodermic involvement. Disturbances of the autonomic nervous system may play some part in the causation. Clinical diagnoses of cardiospasm and hiatal hernia of the short esophagus type are made most frequently in these cases. Stenosis of the lower part of the esophagus and esophagogastric junction may occur with hiatal hernia as the result of chronic inflammation of the lower part of the esophagus. This inflammation is the result of incompetence of the cardiac sphincter with regurgitation of gastric secretions. Treatment of esophageal lesions of acrosclerosis consists in passage of sounds over a previously swallowed thread. Fairly satisfactory results have been obtained.

South American Trypanosomiasis.—Although Chagas disease has been considered as one limited to South or Central America, it could become endemic in the United States. Naturally infected triatomas (the insect vector) and ones capable of acting as vectors have been found in Arizona, California, Florida, New Mexico, Texas and Utah. Moseley and Miller observed Chagas disease in 2 American soldiers. Both were infected by the trypanosome in Panama. In contradistinction to the cases previously reported from Panama the infection gave rise to a serious illness in both soldiers. These are the first 2 instances in which the infection has been diagnosed in other than native born inhabitants in this country. Serial electrocardiograms were made, and the cardiac manifestations of the disease were studied in 1 case. Articular symptoms and signs may occur as a manifestation of this disease and these and many of the other features of acute Chagas disease may closely simulate rheumatic fever. Lymphocytosis appears to be a laboratory finding of clinical significance in Chagas disease. In the treatment of these 2 cases antimony was of therapeutic value.

Archives of Physical Medicine, Chicago

26:741-794 (Dec.) 1945

Work Therapy in an Army General Hospital. H. L. Rudolph.—p. 741.
Challenge of Crutches: IV. Prescribing Crutch Gaits for Orthopedic Disabilities. G. G. Deaver and Mary E. Brown.—p. 747.
New Uses of Procaine (Preliminary Communication). F. M. Allen.—p. 759.
Exercising Device for Increasing Joint Action. L. B. Newman.—p. 762.
Stockinet Adhesive Chest Strapping. B. C. Wiley.—p. 764.
Physical Medicine in Army Air Forces Convalescent Hospital. H. A. Rusk and K. E. Voldeng.—p. 766.

Archives of Surgery, Chicago

51:125-204 (Oct.) 1945

Lesions of Spinal Epidural Space Producing Cord Compression. H. A. Shenkin, R. C. Horn Jr. and F. C. Grant.—p. 125.
*Resection of Lung in Treatment of Pulmonary Tuberculosis. O. C. Brantigan.—p. 147.
Studies on Muscle Atrophy: Method of Recording Power in Situ and Observations on Effect of Position of Immobilization on Atrophy of Disuse and Denervation. J. Eisenhauer and J. A. Key.—p. 154.
Reestablishment of Pancreatic Secretion into Intestine After Division of Pancreas: Experimental Study. H. G. Smithy, H. R. Pratt-Thomas and L. M. Mace.—p. 164.
Intussusception of Vermiform Appendix: Report of Case. F. M. Ingersoll and J. V. Meigs.—p. 172.
Progress in Orthopedic Surgery for 1944: Review Prepared by an Editorial Board of American Academy of Orthopedic Surgeons: I. Diseases of Growing and Adult Bone. J. A. Siegling.—p. 174.
Id.: II. Congenital Deformities. J. H. Kite.—p. 177.
Id.: III Tumors of Bone and Synovial Membrane. H. E. Meyerding.—p. 181.
Id.: IV. Conditions Involving Hip Joint. J. J. Fahey.—p. 188.
Id.: V. Conditions Involving Foot and Ankle. D. W. Hauser and R. P. Montgomery.—p. 195.

Resection of Lung in Pulmonary Tuberculosis.—Brantigan says that, if the contralateral lung is free of disease, pulmonary resection appears to be the best treatment after the occurrence of irreparable damage, such as bronchial stenosis, bronchial disease with or without ulcerations not responding to bronchoscopic treatment and after an unsuccessful thoracoplasty. Pulmonary resection is the only form of treatment that can be used effectively when pneumothorax or phrenic paralysis, with or without pneumoperitoneum, does not control disease at the base of the lung, a cavity against the mediastinal surface in the lower half of the chest, or a cavity in the middle portion of a lung. Criticism might be justified when a lobectomy of the upper lobe is elected as a method of choice instead of thoracoplasty. He reports 9 cases in which lobectomy was done, with 1 fatality. In 5 of the 9 cases endobronchial disease existed. Pulmonary resection for tuberculosis is a relatively safe operation. The late end results are as yet unknown. As long as the postoperative condition is an improvement over the preoperative one, definite benefit has been achieved even though the disease is not cured.

Arkansas Medical Society Journal, Fort Smith

42:107-128 (Nov.) 1945

Hemorrhagic Diathesis. J. N. Compton.—p. 107.
Evaluation of Continuous Caudal in Small Hospital. J. K. Walker.—p. 112.
Modern Concepts of Vascular Disease. C. T. Chamberlain.—p. 114.

42:129-154 (Dec.) 1945

Brief Discussion of Thermal Burns. W. G. Cooper.—p. 129.
Modern Concepts of Cardiovascular Disease: Heart Failure. C. T. Chamberlain.—p. 131.

Bulletin New York Academy of Medicine, New York

21:631-696 (Dec.) 1945

*Value of Protein and Chemical Components (Amino Acids) in Surgical Repair. Co Tui.—p. 631.
Factors Determining Dosage of Penicillin in Treatment of Infections. C. H. Rammelkamp and W. M. M. Kirby.—p. 656.
Shock Therapy of Psychoses: Evidences For and Against Damage. N. D. C. Lewis.—p. 673.

Value of Protein in Surgical Repair.—Co Tui stresses that proteins are essential to wound healing, the maintenance of tissue integrity and expeditious convalescence. Protein deficiency endangers all three. A patient can become protein deficient as a result of inadequate intake and increased nitrogen output or a combination of these two factors. Decreased intake may be due to the patient or to neglect on the part of the attending staff. Increased output may be due to increased metabolic loss and to the loss through exudates. The ceiling of nitrogen intake in natural food is naturally low, and consequently natural food is often inadequate to replenish the increased protein loss in disease and injury. Studies in cases of burns and of postoperative gastrectomy, cholecystectomy and herniotomy suggest that convalescence can be shortened, strength and weight conserved by full caloric and nitrogen replacement immediately postoperatively and that there may be a critical range of nitrogen intake for each disease category. The protein hydrolysates are indispensable in many disease conditions and can be used with greater elasticity than natural food. In the course of study on the value of protein hydrolysates a new treatment of peptic ulcers has been evolved. Protein hydrolysates for clinical use must fulfil a number of criteria, and clinicians using them must be quantitatively minded. The nutritional status can be studied by four methods: (1) the nitrogen balance, (2) the plasma protein curve, (3) the body weight curve and (4) the bedside ergograph.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

5:1-122 (Jan.) 1946

Balanced Suspension and Fractures of Femur. V. L. Hart.—p. 57.
Nutritional Aspects of Care of Paralyzed Patients. H. A. Harper.—p. 63.
Simple Method of Removing Vesical Calculi in Paraplegic Patients. L. W. Hewit.—p. 68.
Jaw Relationship Records—Vertical Dimension and Centric. E. S. Smith.—p. 70.
Psychiatry in Fifth Army Area. H. S. Wright.—p. 73.
Clinical Experience with Snake Bites on Okinawa. W. B. Martin.—p. 79.
Treatment of Patient at Sea. H. H. Livingston.—p. 82.
Relation of Weil-Felix Reaction to Clinical Course of Tsutsugamushi Disease. E. N. Irons and C. A. Armbrust Jr.—p. 85.
Bacterial Flora in Cantonment Type Surgical Ward. C. M. Furtherer and Marian Hofmann.—p. 100.
Radiation Characteristics of Field X-Ray Unit Used for Superficial Therapy. A. L. Bachman.—p. 103.

California and Western Medicine, San Francisco

63:205-258 (Nov.) 1945

Public Health and Preventive Aspects of Streptococcal Infections. L. A. Rantz.—p. 211.
Carcinoma of Rectum. W. H. Daniel.—p. 213.
Survey of Over 13,000 Fractures in Employees of Richmond Shipyards. C. C. Cutting, L. Fisher and N. Neadoff.—p. 216.
Cardiac Pathology as Related to Anesthesia. C. C. Langsdorf.—p. 218.
Filariasis. R. B. Schutz.—p. 221.
Atelectasis of Newborn: Treatment by Bronchoscopic Drainage. H. Owens.—p. 225.
Staphylococcus Aureus Endocarditis: Treatment with Penicillin—Report of Case. R. E. Hoyt and F. E. Bissell.—p. 226.
Blood Transfusions at the San Francisco Hospital. J. C. Geiger.—p. 227.

63:259-312 (Dec.) 1945

Technic of Carotid Sinus Stimulation. J. M. Askey.—p. 266.
Variations in Size of Human Stomach. A. J. Cox.—p. 267.
Anatomic Demonstration of Anovulatory Menstrual Cycle. G. L. Laqueur.—p. 268.
Introspection and Orbital Cortex. J. M. Nielsen.—p. 269.
Early Public Health in California. G. P. Jones.—p. 275.

Canadian Medical Association Journal, Montreal

53:527-624 (Dec.) 1945 **Partial Index**

Human Requirements of Thiamine. E. G. Young.—p. 527.
Air Borne Fungus Spores in Manitoba: A Six Year Survey, 1939-1944. C. H. A. Walton and Margaret G. Dudley.—p. 529.
Psychiatry in Industry. D. E. Cameron.—p. 538.
*Indications for and End Results of Fenestration Operation. J. A. Sullivan.—p. 543.
Corneal Transplantation. J. Audet-Lapointe.—p. 548.
Source of Danger in Thoracentesis and Prevention. W. E. Kunstler.—p. 552.
Anemias of the Newborn. G. B. Wiswell.—p. 555.
Epidemic of Acute Laryngotracheobronchitis. F. W. Jeffrey.—p. 562.
Nasal Medication in Sinusitis. G. E. Tremble and F. Smith.—p. 564.
Three Problems of the Amputee. P. J. Burnham.—p. 569.
*Tietze's Syndrome. A. K. Geddes.—p. 571.
Infective Hepatitis. C. H. A. Walton.—p. 573.
Diagnosis of Occupational Eczema. A. Marin.—p. 578.
Scope of Anesthesiology. S. Fleming.—p. 581.

Fenestration Operation.—Sullivan's experience with the fenestration operation was gained in the treatment of 410 cases. The degree of improvement in hearing which is obtained and maintained as a result of plastic reconstruction of the auditory

mechanism in an otosclerotic ear is in direct proportion to the exactitude and perfection with which each step in this technic is carried out. Complete rehabilitation for social and economic contact as a result of restored hearing was accomplished in 246 of his 410 cases. Partial rehabilitation for social and economic contacts was accomplished in 17 cases. The hearing was not improved and remained at the preoperative audiometric decibel level in 21 cases. The hearing was depressed to a decibel level lower than the preoperative one in 15 cases. There were 19 cases in which the fistula had closed and the hearing reached its preoperative level. The loudness balance test gives more information than any of the others. In this test, a sound is fed every one and one-half seconds to one of a pair of matched earphones on the patient's ear. If the ears are not the same the sound is selectively adjusted on one of the ear phones until the loudness is equal; that is, the loudness is balanced. The difference between the two voltages measures the difference in the loudness sensitivity of the two ears. The balance is carried out in steps from threshold level up to the limit of the patient's tolerance, where discomfort or pain occurs. In clinical otosclerosis cessation of the progress of deafness can be obtained by the establishment of a permanent labyrinth fistula. To obtain a lasting improvement, a second condition is required: the adaptation to this fistula of a new tympanic system as amplifier of the aerial sound vibration. The duration of the functional benefit depends on the permanence of the anatomic modification.

Tietze's Syndrome.—The syndrome of nonsuppurative and nonspecific but painful swelling of rib cartilages was first described by Tietze in 1921. All of Geddes' 22 patients had a concomitant respiratory infection. In some the onset of the respiratory infection antedated the chest pain; in others it was coincident; in still others the respiratory symptoms followed in one or two days. In the cases of long duration there was a strong tendency to recurrence of tenderness with each fresh "cold." All the cases occurred in autumn and winter. The age incidence varied from 19 to 40 years. All were well nourished. Altogether 28 cartilages were involved in the 22 patients. The second left and the second right costal cartilages were most frequently involved, but apparently any of the costal cartilages can be involved. The course is variable and often prolonged. The disability produced is minor, not necessitating hospitalization, but may be very annoying and in most cases necessitates light duty for weeks. The cause is unknown. There is no reason to suspect dietary deficiency. The association with respiratory disease is invariable. Tuberculosis and syphilis were ruled out. When patients present themselves with thoracic pain the possibility of Tietze's syndrome should be borne in mind.

Cancer Research, Baltimore

5:673-768 (Dec.) 1945

Carcinogenesis with Azo Compounds: I. Action of Four Azo Dyes in Mixed and Pure Strain Mice. A. H. M. Kirby.—p. 673.
Id.: II. Action of Azo Compounds in Mice, and Bearing Thereof on Theories of Azo Dye Carcinogenesis. A. H. M. Kirby.—p. 683.
Deterrent Effect of Light on Incidence of Spontaneous Mammary Cancer in Mice. F. L. Apperly, M. K. Cary and A. J. Borowski.—p. 697.
*Relationship of Caloric Intake and Blood Sugar to Sarcogenesis in Mice. H. P. Rusch, R. O. Johnson and B. E. Kline.—p. 705.
Certain Effects of Dietary Pyridoxine and Casein Carcinogenicity of p-Dimethylaminoazobenzene. E. C. Miller, C. A. Baumann and H. P. Rusch.—p. 713.
Phosphorus Compounds in Animal Tissues: II. Nucleic Acid Content of Homologous Normal and Cancer Tissues. W. C. Schneider.—p. 717.
Attempts to Localize Tumor Metastases in Long Bones by Mechanical Trauma. O. Saphir, M. Appel and D. H. Levinthal.—p. 722.
Reticuloendothelial Immune Serum: III. Effect of Strong Concentrations on Growth of Walker Rat Sarcoma 319 in Vitro. C. M. Pomerat. —p. 724.

Caloric Intake and Blood Sugar in Sarcoma in Mice.—Eight groups of 40 strain C mice each were placed on diets that varied in their content of calories, protein and fat. Half of the groups were allowed a caloric intake of 9.3 calories per mouse daily, and the other half were restricted to 5.7 calories per mouse daily. The groups were further divided in such manner that the level of protein was either high or medium and the amount of fat either medium or low. After the mice had been stabilized on their diets for fifty days, each was injected subcutaneously with 200 micrograms of 3,4-benzpyrene in 0.2 cc. of corn oil. A comparison was made between caloric consumption, tumor formation and the level of blood sugar. The mice on nonrestricted diets were heavier, the blood sugar tended to be higher than in those whose caloric intake was restricted, and the development of sarcomas was facilitated in the mice that were relatively hyperglycemic. Although the evidence indicates that under certain conditions the development of neoplasms is favored in animals with a somewhat elevated blood sugar, this in itself was not necessary for tumor formation, as was shown in the case of mice receiving a high caloric diet in which considerable carbohydrate was replaced by protein and fat. In this case the incidence of sarcomas was high, although the blood sugar level was not much different from that of the restricted mice.

Delaware State Medical Journal, Wilmington

17:201-218 (Nov.) 1945

Procurement and Assignment. P. C. Barton.—p. 201.
Hyperinsulinism. C. Levy, L. Jones and W. P. Martin.—p. 205.
Surgical Treatment of Gastrojejunal Ulcer. P. Alava.—p. 209.
Cervicofacial Actinomycosis Successfully Treated with Penicillin and Repeated Aspirations. E. M. Bohan and G. S. Serino.—p. 213.

17:219-246 (Dec.) 1945

Tularemic Pneumonia: Case. J. Beebe.—p. 219.

Gastroenterology, Baltimore

5:155-240 (Sept.) 1945

Pruritus Ani: Clinical Study. A. L. Shapiro and S. Rothman.—p. 155.
Dibutoline: II. Effect on Insulin Induced Gastric Hypermotility in Human Subjects and Other Observations. Clare G. Peterson and D. R. Peterson.—p. 169.
Effect of Succinylsulfathiazole on Volume of Intestinal Gas in Normal Young Men. E. A. Rasberry Jr.—p. 175.
Pancreatic Lithiasis: Report of 2 Cases in Young Adults. H. F. Wechs' r and J. I. Weimer.—p. 181.
Serial Tests of Hippuric Acid Formation in Hepatitis After Intravenous Sodium Benzoate. R. C. Page and P. W. Preisler.—p. 189.
Effects on Small Intestine of Rapid Intravenous Injections of Casein Hydrolysate. N. Learner, H. W. Robinson, E. M. Greisheimer and M. J. Oppenheimer.—p. 201.
*Study of Alleged Role of Caffeine in Pathogenesis of Gastric Ulcer. G. Giddings, W. Wynn and J. Haldi.—p. 210.

Caffeine in Pathogenesis of Gastric Ulcer.—Giddings and his co-workers found that administration of 75 mg. of caffeine per kilogram of body weight by stomach tube to 26 cats daily for twenty-one days did not produce erosions or ulcers in the stomach. Injection of the same amount of caffeine daily intramuscularly in a mixture of beeswax and oil for the same length of time likewise failed to produce erosions or ulcers. Ulcers were produced in cats by caffeine only when the dose was large enough to kill the animal. Thirty-four albino rats were given 75 mg. of caffeine per kilogram of body weight by stomach tube over a period of eight to twenty weeks. In only 3 animals were there any alterations in the stomach that might be regarded as erosions or ulcers. The structural changes in these instances were microscopic. These experimental data do not offer valid reason for the conclusion that caffeine-containing beverages such as coffee or tea play a part in the pathogenesis of gastric ulcer in man.

5:241-344 (Oct.) 1945

*Infectious Hepatitis, with Especial Reference to Its Occurrence in Wounded Men. A. M. Snell, D. A. Wood and L. J. Meienberg. —p. 241.
Small Intestine: Review of Recent Literature. E. D. Kiefer.—p. 259.
Chronic Ulcerative Colitis with Infantilism and Carcinoma of Colon. W. E. Ricketts, E. P. Benditt and W. L. Palmer.—p. 272.
Stoppage of Bodily Growth in Boy with Stenosing Enteritis: Case. W. C. Alvarez.—p. 281.
Observations on Anorexia. J. Meyer, Harriet Sorter and H. Necheles. —p. 283.
*Cardioesophageal Relaxation. M. Berk.—p. 290.
Gastric Acidity in Rheumatoid Arthritis. O. Lucchesi and M. Lucchesi. —p. 299.
Experimental Studies on Excretion of Neutral Red by Stomach. R. Kolm, S. A. Komarov and H. Shay.—p. 303.

Infectious Hepatitis in Wounded Men.—According to Snell and his associates infectious hepatitis has manifested itself as one of three clinical entities: epidemic jaundice, postvaccinal (yellow fever) hepatitis and homologous serum jaundice. Fatal cases of any of the three types have shown a common picture

may be due to the patient or to neglect on the part of the maintained as a result of plastic reconstruction of the auditory

at necropsy, namely that of acute or subacute (yellow) atrophy of the liver. It appears probable that serum or blood containing the icterogenic agent might be responsible for certain clinical cases of hepatitis occurring in wounded men who had received these agents at the time of injury. The authors have seen 32 such cases, with recovery in 26; the six deaths occurred on an average of one week after jaundice was first noted. All patients had received blood or/and plasma at the time of injury and thereafter. Eight, including the 6 who died, developed symptoms of involvement of the central nervous system. The essential pathologic picture in the fatal cases was one of an acute autolytic process in the liver. The relatively high mortality in this series is believed to be due to nutritional factors secondary to the wounds which these men had received The prevention of fatalities in serum jaundice occurring in wounded men must begin with the maintenance of their general nutrition and the correction of protein and vitamin deficiencies. The use of dextrose intravenously becomes a necessity until vomiting and anorexia have subsided. The authors used amigen solution conjointly with the dextrose. Once the patient is able to take food, the standard high carbohydrate, high protein diet, low in fat, long employed in the treatment of hepatic disease, should be administered until functional hepatic tests indicative recovery.

Cardioesophageal Relaxation.—Berk says that cardioesophageal relaxation or incompetence of the cardiac sphincter is an abnormality in which contents from the stomach regurgitate freely into the esophagus. In the instance described the condition was diagnosed by roentgenoscopy and confirmed by esophagoscopy. The patient was a man aged 47. The cause of the condition is unknown. It is apparently not a clinical entity. The importance of cardioesophageal relaxation lies in its possible confusion with other conditions about the terminal esophagus, such as hiatus hernia, diverticulum, achalasia or cancer. It frequently gives rise to disturbing symptoms, chief of which are epigastric distress and lumpy sensation at the lower sternum. Regurgitation and the relationship of symptoms to position were prominent in the case reported. It is likely that cardioesophageal relaxation is frequently overlooked and that if the radiologist reviews his old plates he may see a globular mass of barium outlining the lower part of the esophagus and obscured somewhat by the shadow of the spine. Cardioesophageal relaxation can be diagnosed by fluoroscopy usually in the supine or Trendelenburg position, whereupon barium may be seen to flow passively into a dilated lower esophagus and gravitate back into the stomach when the upright position is assumed.

Illinois Medical Journal, Chicago

88:221-272 (Nov.) 1945

Plastic Procedures About the Eyes. I. Puntenney.—p. 238.
Indications and Contraindications to Gastroscopy. M. M. Kirschen.—p. 243.
Orbital Proptosis. E. A. Thacker.—p. 246.
Emotional Control a Factor in Preserving Integrity of Heart. E. Keating.—p. 252.
Rorschach Test in Postencephalitis. J. L. Endacott.—p. 256.
Hemorrhagic Encephalopathy Following Five Day Treatment of Early Syphilis with Massive Doses of Mapharsen: Report of Case with Recovery. G. Heilbrunn and N. Hoffenberg.—p. 258.
Illinois Hospital Survey. R. R. Cross.—p. 263.

Industrial Medicine, Chicago

14:825-948 (Nov.) 1945. **Partial Index**

Relation of Hypersensitiveness to Poison Ivy and to Pure Ingredients in Cashew Nut Shell Liquid and Related Substances: Quantitative Study Based on Patch Tests. H. Keil, D. Wasserman and C. R. Dawson.—p. 825.
Physical Medicine in Industrial Injuries. S. L. Osborne.—p. 830.
The Consultant in Relation to Plant Physician. C. Leggo.—p. 834.
*Thymol Barbitone Test in Clinical Practice. C. P. McCord, L. L. Kline and P. E. Williams.—p. 835.
Illness in Industry. C. F. Long.—p. 840.
Army Industrial Medical Program at Port of Embarkation. J. S. Felton.—p. 854.
Health Aspects of Aluminum Ponton Work. F. E. Rieke.—p. 896.

The Thymol Barbital Test.—Ancillary to an investigation of the thymol barbital test in experimental carbon tetrachloride intoxication, McCord and his associates examined the serum or spinal fluid of 712 hospital patients. In 168 specimens of a somewhat selected group, 20 reactors (12 per cent) were detected. There were 49 reactors, or 6.8 per cent, among the total of 712 patients. Liver damage was indicated in the greater number of reactors, but the validity of the test was lower than appraised by Maclagan. The observations made by the authors do not agree with the concept that this test constitutes a measure of the gamma globulin present. Gamma globulin in pure form does not provide positive results, while the phospholipins, apart from gamma globulin, consistently led to heavy reactions. In certain instances, in the presence of weakly positive determinations the addition of traces of gamma globulin (itself negative) enhances the degree of positivity. It appears possible that gamma globulin may enter or may influence the precipitation phenomenon without constituting the chief precipitate. Reactors were not detected among 30 presumably healthy workers. Among 52 chemical workers 4 reactors were encountered. The latter control group is not representative of industrial workers in general. Positive results at and above 4 thymol units suggest pathologic change with implications of the liver. The thymol barbital test is not a measure of liver function; instead it denotes disturbed liver metabolism.

Journal of Aviation Medicine, St. Paul

16:285-362 (Oct.) 1945

Study of Aero Medical Problems in Liberator Bomber at High Altitude. J. H. Lawrence, C. R. Tobias, W. R. Lyons, H. F. Helmholz Jr. and A. R. Sweeney Jr.—p. 286.
Relationship of Anoxia Susceptibility to Diet. D. M. Green, J. S. Butts and H. F. Mulholland.—p. 311.
Effect of Diet on Altitude Tolerance. M. Eckman, Beatrice Barach, C. A. Fox, C. C. Rumsey Jr. and A. L. Barach.—p. 328.
Flying Safety in AAF. R. H. Follis Jr.—p. 341.
*Report of Death of Passenger Under Treatment by Pneumothorax. K. E. Dowd.—p. 346.
Effectiveness of Preflight Oxygen Breathing in Preventing Decompression Sickness. F. M. Henry and S. F. Cook.—p. 350.
History of Progressive Changes in Equipment Used by Medical Department. G. E. Ledfors.—p. 356.
Improvement in Technic of Proetz Method of Treating Paranasal Sinusitis. M. J. Hoilien.—p. 358.

Death of Aircraft Passenger Under Treatment with Pneumothorax.—Dowd reports that an airline passenger, a man aged 21 who had pulmonary tuberculosis and an artificial pneumothorax, wore an oxygen mask which functioned normally. The mask was applied at 7,000 feet altitude. In another ten minutes the altitude of 16,000 feet was reached. Two minutes later, and without prior evidence of illness, the passenger became unconscious. In spite of all efforts at treatment he remained unconscious up to his death twenty-eight hours later. Death most probably resulted from air embolism. The convulsions, vomiting and unconsciousness all point to some residual cerebral damage which one would expect from a focal cerebral lesion such as could occur in air embolism. There is also a possibility that the cerebral nervous system disturbance was due to prolonged cerebral anoxia which, because of mediastinal shift or mediastinal emphysema or both, brought about by increased pneumothorax induced by altitude, caused impairment of cerebral circulation with sufficient cerebral anoxia to cause an irreversible reaction and death. Patients with pneumothorax should not travel by air, or, if they must, the height at which they travel should be restricted to altitudes of 5,000 feet.

Journal of Bacteriology, Baltimore

50:373-490 (Oct.) 1945. **Partial Index**

Nutritional Requirements of Lactic Acid Bacteria and Their Application to Biochemical Research. E. E. Snell.—p. 373.
Pyrogenicity of Bacterial Contaminants Found in Biologic Products. T. F. Probey and Margaret Pittman.—p. 397.
Studies on Death of Bacteria at Low Temperatures: I. Influence of Intensity of Freezing Temperature, Repeated Fluctuations of Temperature and Period of Exposure to Freezing Temperatures on Mortality of Escherichia Coli. R. S. Weiser and C. M. Osterud.—p. 413.
Morphology and Nature of Pleuropneumonia Group of Organisms. L. Dienes.—p. 441.
Paper Disk-Agar Plate Method for Assay of Antibiotic Substances. E. J. de Beer and M. B. Sherwood.—p. 459.
Influence of Changes in Concentration and Temperature on Bactericidal Activity of Formaldehyde in Aqueous Solutions. F. W. Tilley.—p. 469.
Fermentation of Glucose by Certain Gram-Positive, Non-Spore Forming, Anaerobic Bacteria. C. S. Pederson.—p. 475.
Correlation Between Antibacterial Power and Chemical Structure of Higher Alkyl Ammonium Ions. E. I. Valko and A. S. DuBois.—p. 481.

cutaneously with 200 micrograms of 3,4-benzpyrene in 0.2 cc. cases of any of the three types have shown a common picture

Journal of International College of Surgeons, Chicago

8:404-501 (Sept.-Oct.) 1945

Ten Years' Experience with Surgical Treatment of Pulmonary Tuberculosis. G. Lundh.—p. 404.
Solid Tumors of Ovary. E. C. Hessert and J. Bianco.—p. 413.
New Operative Technic for Cysts of Lung and for Chronic Spontaneous Pneumothorax. R. Nissen.—p. 421.
Sano Tissue Glue Skin Grafting. J. G. Evans.—p. 424.
Local Infiltration of Procaine Hydrochloride Solution Combined with Intravenous Administration of Pentothal Sodium. H. Bailey.—p. 427.
Supravaginal and Complete Hysterectomies: Analysis of Indications, Results and Dangers. R. W. Mohler and E. H. Bishop.—p. 431.
Newer Developments in Shock and Refrigeration. F. M. Allen.—p. 438.
Method of Inguinal Herniorrhaphy. R. Lich Jr. and R. B. Samson. —p. 454.
Management of Swallowed Sharp Foreign Bodies: Report of Perforations of Appendix by Common Pin and of Cecum by Toothpick. M. Weintrob and E. Granet.—p. 459.
Local Anesthesia: Some Details Indispensable for Its Success. M. González Ulloa.—p. 488.
Who Introduced Cotton into Surgery? J. Alcántara.—p. 496.

Journal of Nervous and Mental Disease, New York

102:433-536 (Nov.) 1945

*Electromyographic Studies in Poliomyelitis. P. M. Kohn, E. M. Zucker and J. A. Toomey.—p. 433.
Psychiatric Cross Section Perspective Viewed Through Juvenile Court Cases. S. I. Stein.—p. 440.
Character and the Psychopath. P. W. Thomas.—p. 449.
Science and Awareness. A. N. Foxe.—p. 454.
Central Nervous System in Acute Disseminate Lupus Erythematosus. D. Daly.—p. 461.
Studies Regarding Glutamine and Ammonia in Cerebrospinal Fluid of Patients with Nervous and Mental Diseases, with Some Observations on Insulin Hypoglycemic Shock and Oligophrenia Phenylpyruvica. M. M. Harris, with technical assistance of Roslyn T. Roth and Ruth S. Harris.—p. 466.
Foster Homes for Adults: Note on Practitioner's Improvisation. W. Muncie.—p. 477.
*Fatality Incident to Electroshock Treatment: Review of Subject and Autopsy Report. A. Gralnick.—p. 483.
Electroconvulsive Therapy in Prone Position. F. Feldman, S. Sussel-man and S. E. Barrera.—p. 496.
Electroconvulsive Therapy of Acute Hysteria. F. Feldman, S. Sussel-man, B. Lipetz and S. E. Barrera.—p. 498.
Asthma and Solitude: Study of Asthmatic Incarcerate. P. L. Goitein and E. A. Brown.—p. 501.

Electromyographic Studies in Poliomyelitis.—Kohn and his associates did electromyographic studies on 13 patients ranging in age from 7 to 33 years. The patients were tested from seven to eighty days following their admission to the hospital. It was found that most muscles paralyzed in poliomyelitis do not show electromyographic evidence of spasm while at rest and that spasm is not an ever present symptom in paralyzed muscles. In this series only 20 per cent of the involved muscles tested showed continuous and sustained potential changes even when passively stretched. In cases showing inconstant discharges when stretched it was noted that the potentials appeared only with the initial stretching and disappeared even though the muscle was kept on tension. This led the authors to suspect that some of these potentials may have been due to a protective splinting of the muscle in response to the pain produced by the needle electrodes themselves. Such a possibility was tested by applying both surface electrodes and needle electrodes to the same muscle and stretching the muscle. Potentials were picked up from this muscle by both types of electrodes. However, when the needle electrodes were removed and the muscle again stretched, potential changes were not detected. One of the most interesting findings was the evidence of disordered reciprocal innervation. This phenomenon is understandable in view of the fact that pathologic changes in poliomyelitis are found not only in the anterior horn cells but in the posterior horn cells and posterior root ganglions as well. Since intercalated (internuncial) neurons are found in the posterior horns, these cell bodies are also involved in the disease process. Disturbances in their function should be expected and clinically manifested by disordered reciprocal and cross innervation reactions. The simultaneous activation of agonist and antagonist corroborates a similar finding by Watkins and his associates. The additional finding of simultaneous activation of corresponding antagonist and agonist muscles of the opposite side tends further to support the concept of disorganization of the neuromuscular mechanism in poliomyelitis as one of the features of this disease.

Fatality in Electroshock Treatment.—Gralnick reports what appears to be the thirteenth fatality from electroshock treatment in the American literature, and the seventh with a necropsy report. The cellular changes found were mainly the result of the presence of a tumor. What part of these changes resulted from the electroshock itself cannot be answered. The case illustrates that when the brain is in a state of delicate balance it requires little electrotherapy to destroy it completely. While usually the changes produced seem to be physiologic and reversible, they may, in the presence of preexisting structural damage, eventuate in further permanent alterations. When antecedent damage is not known to have been present, any resulting structural pathologic condition may be due to individual susceptibility. The evidence for such a supposition in human beings is not complete.

Journal of Pharmacology & Exp. Therap., Baltimore

85:1-102 (Sept.) 1945

Calculation of Biologic Assay Results by Graphic Methods: All or None Type of Response. E. J. de Beer.—p. 1.
Antithyroid Studies: II. Goitrogenic Activity of Some Imidazoles and Benzimidazoles. W. G. Bywater, D. A. McGinty and N. D. Jenesel. —p. 14.
Experimental Basis for Quantitative Chemotherapy of B. Novyi in Mice, with Comparison of Action of Penicillin and Dichlorphenarsine Hydrochloride. A. P. Richardson, H. A. Walker, P. Loeb and I. Miller.—p. 23.
*Distribution and Fate of Penicillin in Body. W. C. Cutting, F. P. Luduena, M. Fiese, H. W. Elliott and J. Field II.—p. 36.
Effect of Various Electrolytes on Toxicity of Desoxycorticosterone Acetate. H. Selye, J. Mintzberg and E. M. Rowley.—p. 42.
Blocking Action of Cinchona Alkaloids and Certain Related Compounds on Cardioinhibitory Vagus Endings of Dog. E. Hiatt, D. Brown, Gertrude Quinn and K. MacDuffie.—p. 55.
Isopropyl Alcohol: Acquired Tolerance in Dogs, Rate of Disappearance From Blood Stream in Various Species and Effects on Successive Generation of Rats. A. J. Lehman, H. Schwerma and Eleanor Rickards.—p. 61.
Further Observations on Pressor Action of Optical Isomers of Sympathomimetic Amines. E. E. Swanson, F. A. Steldt and K. K. Chen. —p. 70.
Hydrolysis of Demerol by Liver in Vitro. F. Bernheim and Mary L. C. Bernheim.—p. 74.
Biologic Comparison of Local Anesthetics. Edith Bülbring and Isabella Wajda.—p. 78.
Synthetic Substitutes for Atropine. H. R. Ing, G. S. Dawes and Isabelle Wajda.—p. 85.

85:103-206 (Oct.) 1945. **Partial Index**

Continuous Intravenous Chemotherapy of Plasmodium Lophurae Infection in Ducks. A. C. Bratton Jr.—p. 103.
Central Stimulant Action of Some Vasopressor Amines. M. R. Warren and H. W. Werner.—p. 119.
Observations on Nature of Antagonism of Histamine by Beta-Dimethylaminoethyl Benzhydryl Ether (Benadryl). J. A. Wells, H. C. Morris, H. B. Bull and C. A. Dragstedt.—p. 122.
Antithyroid Studies: III. Goitrogenic Activity of Certain Chemotherapeutically Active Sulfones and Related Compounds. D. A. McGinty and W. G. Bywater.—p. 129.
Studies on Mechanism of Action of Sympathomimetic Amines. W. M. Govier, Vera Bermann and K. H. Beyer.—p. 140.
Studies on Shock Induced by Hemorrhage. Margaret E. Greig and W. E. De Turk.—p. 150.
Effect of Digitalis on Coagulation Time of Blood. Helen Ramsey, N. W. Pinschmidt and H. B. Haag.—p. 159.
Studies on Antimalarial Drugs: Metabolism of Quinine and Quinidine in Birds and Mammals. F. E. Kelsey, F. K. Oldham and E. M. K. Geiling.—p. 170.
Effect of Ether, Divinyl Ether and Cyclopropane Anesthesia on Heart Rate and Rhythm and Blood Pressure During Normal Respiratory Activity and During Artificial Respiration After Respiratory Arrest. B. H. Robbins.—p. 192.
Studies on Cyclopropane: IX. Effect of Premedication with Demerol on Heart Rate, Rhythm and Blood Pressure in Dogs Under Cyclopropane Anesthesia. B. H. Robbins.—p. 198.
Degradation of Quinine in Duck, Chicken and Dog. E. H. Dearborn and E. K. Marshall Jr.—p. 202.

Distribution and Fate of Penicillin in Body.—Cutting and his associates compared the concentration of penicillin in the blood and in various tissues in rats and rabbits one half hour after the subcutaneous and intravenous injection of 1,000 to 10,000 units of penicillin. In both rats and rabbits the brain contained only a negligible amount of penicillin, and the liver, heart and striated muscle contained amounts approaching that in the blood. The penicillin content of the kidney is more variable than that of other organs. In the case of the rabbit the variability is less than in the rat, and the content, apparently, is significantly higher. Rabbit kidney contained almost fifty

times the amount in the blood, while in only 1 instance was a concentration of this order found in rat kidney. Since penicillin is rapidly excreted in the bile, comparisons of blood and biliary concentrations were made after the intravenous injection of penicillin in dogs. Simultaneous measurements were made in saliva collected after cannulation of the submaxillary duct and augmented by electrical stimulation of the chorda tympani or the sympathetic nerve supply and injection of pilocarpine. It appears that the amount of penicillin which is lost in the saliva is negligible, while that in the bile may be somewhat greater. However, the amount lost in the bile would also appear to be without clinical importance. Biliary obstruction in rabbits did not influence the rate of disappearance of penicillin from the blood, but renal obstruction greatly prolonged its effect. Penicillin is not rapidly destroyed in shed blood at body temperature and even less rapidly in urine or isotonic solution of sodium chloride. Accordingly, the major portion of any administered penicillin is lost in the urine, with a minor part in bile and saliva, and the fate of the portion unaccounted for remains unknown.

85:207-287 (Nov.) 1945

*Chronic Toxicity of Quinacrine (Atabrine). O. G. Fitzhugh, A. A. Nelson and H. O. Carvery.—p. 207.
Antidiuretic Action of Barbiturates (Phenobarbital, Amytal, Pentobarbital) and Mechanism Involved in Action. R. C. de Bodo and K. F. Prescott.—p. 223.
Absorption of Thiourea from Ointments Applied to Wounds. J. W. Williamson Jr., M. R. Warren and H. W. Werner.—p. 234.
Antibiotic Substances Active Against M. Tuberculosis. M. T. Bush, H. L. Dickison, Charlotte B. Ward and R. C. Avery.—p. 237.
*Sulfonamides for Bacillary Dysentery: Antibacterial Activity of Sulfacarboxythiazoles and Sulfathiadiazole. H. J. White, P. H. Bell, J. F. Bone, J. C. Dempsey and M. E. Lee.—p. 247.
Inhibitory Effect of Atabrine and Acridine Derivatives on Acid Fast Bacilli in Vitro. R. C. Avery and Charlotte B. Ward.—p. 258.
Spirocheticidal and Trypanocidal Action of Acid-Substituted Phenyl Arsenoxides as Function of p_H and Dissociation Constants. H. Eagle.—p. 265.
Sympathomimetic Vasodilating Action of Aliphatic Amines. R. P. Ahlquist.—p. 283.

Chronic Toxicity of Quinacrine.—Fitzhugh and his associates studied the lifetime effects of quinacrine on laboratory animals. Studies were made on a total of 180 albino rats. Five groups were placed on a high protein diet and five groups on a low protein diet. One group on each diet was given 100 parts per million of quinacrine, a second group 200, a third 400 and a fourth 800; a fifth, which was used as control, received the diet without the added quinacrine. At the 100 parts per million level the toxic effects of quinacrine were slight. At higher levels they became progressively more severe. At a level of 800 parts per million the rats showed most of the following changes: generalized yellow discoloration; high grade necrosis of the liver; regenerative changes in the remaining viable liver; upper abdominal adhesions; focal necrosis and/or fibrosis of the myocardium and voluntary muscles; basophilic granules in hepatic, renal and other cells; foamy macrophages in several locations; slight hyperplasia of the splenic pulp and bone marrow, and a low grade pulmonary consolidation. At a dosage level of 800 parts per million a high level of protein in the diet considerably delayed and reduced the severity of liver damage as compared to that seen with a low level of protein; at 400 parts per million this delay and reduction was only slight, and at lower levels it was not apparent. At 400 parts per million and lower levels of quinacrine, myocardial fibrosis and other cardiac changes became a factor equal to or greater than liver damage in causing the death of the animal. After eighteen to twenty-four months of feeding, rats on 200 parts per million of quinacrine in either a low or high protein diet frequently showed anatomic lesions as a result of the medication. Even at 100 parts per million there was a small amount of damage. The percentage of rats in which quinacrine caused cirrhosis of the liver was so small that quinacrine cannot be classed as a distinctly cirrhogenic agent. In relation to the body weight of the rat the lowest dosage of quinacrine which produced slight toxic effects in some animals corresponds to approximately 4 mg. per kilogram a day for two years. The authors found that the amount of quinacrine that will produce toxic effects in rats is above the therapeutic or prophylactic dose for man.

Sulfonamides for Bacillary Dysentery.—White and his associates found that sulfacarboxythiazole (2-sulfanilamido-5-carboxythiazole) was about as active as sulfaguanidine against twelve dysentery strains in vitro and against coliform bacteria in mice. With respect to solubility, absorption and mode of action, sulfacarboxythiazole appeared to be similar to sulfathalidine (N^4-phthalylsulfathiazole). Sulfamethylcarboxythiazole (2-sulfanilamido-4-methyl-5-carboxythiazole) decarboxylates quite readily to sulfamethylthiazole. Consequently, further investigation of this compound as a possible chemotherapeutic agent does not appear to be warranted. 2-Sulfanilamido-4-carboxythiazole does not decarboxylate readily but is relatively inactive. Sulfathiadiazole (2-sulfanilamido-1, 3, 4-thiadiazole), when compared with sulfaguanidine, was found to be about ten times as soluble at p_H 6.5, from four to eight times as active against dysentery strains in vitro and more active against coliform bacteria in mice. These properties, together with preliminary data on its absorption in mice, indicated that sulfathiadiazole is at present one of the most promising compounds available for trial in the treatment and prophylaxis of bacillary dysentery.

Journal of Urology, Baltimore

54:409-500 (Nov.) 1945

Bilateral Carcinoma of Adrenal Cortex as Cause of Severe Backache, with Report of Case. J. Zaslow and M. Bernstein.—p. 409.
Pyelocystostomy in Solitary Ectopic Kidney. B. W. Wright.—p. 413.
Renal Typhoid Fever: Presentation of Case of Primary Type. D. J. Abramson.—p. 422.
Ureterocutaneous Anastomosis: Technic to Eliminate Permanent Ureteral Catheters. N. J. Heckel.—p. 430.
Primary Carcinoma of Ureter. C. F. Bowie and E. Bors.—p. 434.
Elasticity of Human Urinary Bladder. J. Krafka Jr.—p. 438.
*Osteitis Pubis Following Prostatectomy. M. Muschat.—p. 447.
Torsion of Appendix Testis (Hydatid of Morgagni): Report of 2 Cases, with Study of Microscopic Anatomy. C. W. Vermeulen and C. S. Hagerty.—p. 459.
Observations on Urolithiasis Among American Troops in Desert Area. L. W. Pierce and B. Bloom.—p. 466.
Use of Wire in Repair of Hypospadias. C. D. Goodhope.—p. 471.
Characteristics and Variations in Semen Specimens in 100 Normal Young Men. J. MacLeod and Louise M. Heim.—p. 474.
Trichomonas in Male. R. E. Strain.—p. 483.
Octin as Spasmolytic in Urologic Practice. J. C. Pennington.—p. 486.
Improved Young Urologic X-Ray Table. H. H. Young.—p. 489.

Osteitis Pubis Following Prostatectomy.—Muschat says that osteitis pubis occurs in a small number of patients after operations on the urinary bladder, especially after prostatectomy. It is an inflammatory process of the bone beginning in the symphysis pubis and gradually involving the pubic rami extending to one or both ischia. This inflammatory process spreads via the periosteum to the variously attached muscles of the pelvis, especially the obturator. The etiology of this condition is obscure. The patient goes through a period of physical agony lasting from three to twelve months. The disease begins about ten days after operation but may not begin until two months later. The pain usually starts over the symphysis, gradually shifting to the right or left of the suprapubic area. Next the pain travels to the crotch, to the triangle of Scarpa and to the inner side of the thighs. Later in the disease there may be pain in the perineum and over the tuberosities of the ischia. The patient experiences excruciating pain in the inner side of the thighs in the form of spasmodic contractions of the adductor muscles. About the third week the x-ray begins to reveal some changes in the symphysis pubis, namely fraying of the periosteum with a moth eaten appearance of the symphysis and the ramus pubis on either side. As time progresses, more bone involvement is seen. Decalcification involves the rami and the inner portions of the ischia until the tuberosities are reached. Necropsies and complete study of the pathology of the bone structures have not been made. Most therapeutic agents that have been tried have been useless. In the author's opinion the disease is self limited and does not require surgical intervention. If an abscess does develop it should be properly drained. The author used penicillin 4,000,000 units in 1 case without any subjective improvement, but it may have caused the absorption of the inflammatory lumps near the ischia. Sulfonamides were tried without

influencing the condition. Any manipulative procedure to hasten the recovery is strongly contraindicated. It only aggravates the condition and stirs up local trauma, thus spreading the disease process and delaying the recovery.

Maine Medical Association Journal, Portland

36:183-198 (Nov.) 1945

Nerve Compression Syndrome of Lumbar Nerves, Modern Concepts and Surgical Treatment. A. S. Crawford.—p. 183.
Medical Care—Airborne. L. M. Schmidt.—p. 188.

36:199-216 (Dec.) 1945

Accessible Malignancies of Head. T. C. McCoy.—p. 199.
Paroxysmal Ventricular Tachycardia: Report of Case. M. Bacon.—p. 202.

Medical Annals of District of Columbia, Washington

14:531-582 (Dec.) 1945

"Typical" Headache of Essential Hypertension: Etiologic Considerations and Report of New Form of Therapy. S. A. Steiner.—p. 531.
Surgical Treatment of Varicose Veins (Retrograde Catheter Method). E. de Savitsch.—p. 539.
Transverse Incision for Gallbladder Surgery. O. C. Cox and H. J. Forrest.—p. 542.
Causalgic State: Early and Fixed Lesions. F. D. Threadgill.—p. 544.

New Therapy in Headache of Essential Hypertension.—On the premise that recumbency seems to favor production of the cephalalgia, Steiner instructed patients to elevate the headposts of their bed on 10 inch high blocks. Of 12 patients in whom elevation of the head of the bed during sleep was employed, 10 obtained dramatic relief of their complaint. Four patients required oral ergotamine therapy and obtained complete relief after a week's course of medication. In only 1 case was there partial failure. This patient was unable to sleep with more than 5 inch elevation of the head of her bed. Nicotinic acid was prescribed in several cases on the hypothesis that this headache, like migraine, is of a primary vasoconstrictor type. It was without value. Phenobarbital and thiocyanates were used prior to institution of the present therapy. They also were ineffective.

Michigan State Medical Society Journal, Lansing

44:1273-1414 (Dec.) 1945

Continuous Caudal Analgesia. R. V. August.—p. 1341.
*Experiences with Fibrin Fixation Methods of Skin Grafting: Clinical Evaluation. W. G. McEvitt.—p. 1347.
*Scurvy. M. F. Osterlin.—p. 1351.
Use of Serous Fluids as Aid in Diagnosis. D. H. Kaump and W. P. Chester.—p. 1353.
Intramuscular Foreign Protein in Treatment of Nonspecific Adenitis. H. G. Clark and M. S. Cioffari.—p. 1358.

Fibrin Fixation Methods of Skin Grafting.—Fibrin fixation methods of skin grafting by the technics of Tiderick and Warner and of Sano were tested by McEvitt in a number of typical situations such as grafting of a raw area over the anterior surface of the chest resulting from radical mastectomy, grafting for burns involving the left axilla and the lateral chest wall in a boy 5 years old, grafting of the forehead, of the eyelids, of the cheek and buccal margins and of the dorsum of the hand for third degree burns and grafting for third degree burns on the left lower extremity from the groin to the ankle. Both technics produced fixation of all types of grafts on both raw and granulating surfaces in a matter of seconds. The grafts remained healthy and viable. "Thrombin topical," a sterile powder prepared from beef plasma and used in Tiderick and Warner's technic, has the advantage of being produced commercially in quantity and delivered by the manufacturer ready for use. The elimination of pressure dressings promotes comfort and earlier movement of the part. Tissue maceration does not occur, and the bedside care of children is simplified. In certain areas of strain such as the interdigital webs and about the mouth, fibrin fixation without pressure dressing involves the risk of graft separation and slough. In such danger areas the combination of fibrin fixation and pressure should improve results. While the elimination of suturing does avoid troublesome bleeding, the advantage is more than counterbalanced by the difficulties inherent in graft-shrinkage. In situations where grafting must be done in the presence of infection, fibrin fixation would seem to be the method of choice. It is a definite aid in adhering flap linings. Fibrin fixation methods properly applied are a valuable addition to the armamentarium of the plastic surgeon.

Scurvy.—From 1937 through 1944 Osterlin observed 68 cases of scurvy, 24 of these at the Central Michigan Children's Clinic during 1943 and 1944. More cases have been seen during the past two years than during any of the preceding years. The disease occurred predominantly (58 cases) during the latter half of the first year of life, when the baby is likely to be on a milk formula without getting sufficient vitamin C from supplementary foods. Irritability, pain on motion, poor appetite, vomiting, diarrhea and sore mouth were the most common symptoms found in this group. Scorbutic rosary, tenderness, particularly in the lower extremities, malnutrition, swollen and bleeding gums, pallor and petechia or purpura were the most common physical findings. Studies showed some or all the typical x-ray findings of vitamin C deficiency. Some form of vitamin C should be given every infant beginning with the first month, particularly those fed on an artificial formula. There are many infants who refuse to take or who vomit orange juice when attempts are made to give it. Fifty mg. of ascorbic acid can easily be given daily. An educational program on the part of physicians and public health workers is essential for the control of scurvy.

Military Surgeon, Washington, D. C.

97:441-542 (Dec.) 1945

Tuberculosis in German Prison Camps. E. R. Long.—p. 449.
Reconditioning Neuropsychiatric Patients in the Army. H. A. Cotton Jr.—p. 450.
Chronic Meningococcemia: Case and Discussion. J. K. Norman.—p. 455.
*Procaine Infiltration in Treatment of Acute Sprains. C. W. McLaughlin Jr.—p. 457.
Case Report of Dissecting Aneurysm of Femoral Artery of Undetermined Etiology and Unusual Symptomatology. R. C. Giles.—p. 460.
*Study of Camptocormia, with Presentation of 3 Postspinal Cases. E. E. Weiss.—p. 462.
Toothaches at Low Atmospheric Pressure. H. C. Sandler.—p. 475.
Meningococcemia, with 4 Case Reports. A. Weisberg.—p. 478.
Aneurysm of Palmar Arteries: Report of Case. R. M. Bradley.—p. 486.
Procaine Toxicity, with Report of Near Fatal Case. G. F. Hewson.—p. 489.
Venereal Disease Control Survey in a Battalion. A. A. Maislen.—p. 493.
Value of Music in Resocialization and Rehabilitation of the Mentally Ill. W. Simon.—p. 498.
Application of Xanthydrol-Koh-Pyridine Method to Determination of 2,2,Bis(P-Chlorophenyl) 1,1,1 Trichlorethane (DDT) in Water. J. C. Castillo and H. A. Stiff Jr.—p. 500.
Improvised Fracture Table. K. M. Lippert.—p. 503.
Extragenital Transmission of Syphilis: Case Report. J. D. Maxwell.—p. 505.
Ring Injuries. H. E. Simon and H. Alban.—p. 506.
New Surgeon's Metal Locator. W. E. Gilson and T. C. Erickson.—p. 508.

Procaine Infiltration in Acute Sprains.—Through a skin wheal using a long intramuscular needle all tender areas about the ankle joint are thoroughly infiltrated with 20 cc. of a 1 per cent procaine solution without epinephrine at each site. It has not been necessary to introduce the procaine into any hematoma which may be present, a general diffusion of the involved area being entirely satisfactory. On completion of the injections the ankle is gently massaged, and manipulation of the joint is undertaken. The foot is carried into all positions, and if discomfort persists the injection is repeated. With satisfactory injection there is immediate relief of pain. Excellent results were observed following primary procaine infiltration in nine tenths of the 51 cases seen within twenty-four hours after the injury occurred. The principal factors which may prevent this method from being successful are delayed injection, inadequate injection and extensive ligamentous damage.

Camptocormia.—Weiss reports 3 instances of camptocormia after spinal puncture in prisoners in a disciplinary center. Camptocormia is a symbol. When it develops in combat or combat training it is explained by "Duck when you're in danger." Suggestion on the part of the physician is a potent etiologic factor in camptocormia. The disability may be brought about unintentionally by the concern and ministrations

of the doctor who seeks and treats an organ reaction without recognizing the emotional-functional basis of the condition. Prolonged examination is neither necessary nor desirable lest excessive concern and ministration lead the patient to believe his condition serious. Like other forms of hysteria, camptocormia can be made to disappear in the same way it develops —through suggestion. The author puts special emphasis on intravenous barbiturate narcopsychotherapy.

New England Journal of Medicine, Boston

233:673-710 (Dec. 6) 1945

*Role of Sympathectomy in Treatment of Immersion Foot and Frostbite. J. L. Southworth.—p. 673.
*Penicillin in Treatment of Tetanus: Report of 2 Cases. L. Weinstein and C. Wesselhoeft.—p. 681.
Diabetic Neuropathy. A. Rudy.—p. 684.
Pneumococcal Pericarditis Treated with Intrapericardial Penicillin: Report of Case. C. M. Grossman.—p. 689.
Hemoglobinemia and Hemoglobinurias. J. F. Ross.—p. 691.
Oat Cell Carcinoma of Lung. Portal Cirrhosis of Liver.—p. 697.
Embolism of Middle Cerebral Artery: Cerebral Infarction.—p. 701.

Sympathectomy in Immersion Foot and Frostbite.—Many first degree cases heal without residual disability in about six weeks. Approximately 25 per cent of such patients have bothersome complaints of a neuritic or vasospastic nature. Many of the second degree injuries heal as do the first degree type as far as the acute manifestations are concerned. Approximately 75 per cent of these patients have complaints of a neuritic or vasospastic nature. In third degree lesions amputations are obligatory and neurologic and vasospastic complications are absent. The late manifestations of immersion foot or frostbite fall into three groups: disturbances of cutaneous sensation, inadequate circulation and pain on use. In first and second degree cases the changes may not become static until eighteen months after injury. Southworth does not employ sympathetic block or ganglionectomy in acute stages of immersion foot. For the treatment of certain sequelae of frostbite or immersion foot, however, sympathetic nerve block or ganglionectomy appears to be indicated. The disturbances of cutaneous sensitivity are almost invariably removed by sympathectomy. In some patients a temporary sympathetic block not involving the somatic nerves immediately restores cutaneous sensitivity and relieves hyperesthesia. In others there is a return to normal within two or three days after ganglion block by alcohol injection or ganglionectomy, but it should be noted that these symptoms do not usually contribute much to permanent disability. If persistent and annoying symptoms of circulatory insufficiency resembling vasospasm are present, sympathectomy is helpful. If excessive sweating, Raynaud's phenomenon or intermittent claudication is prominent in the clinical picture, sympathectomy results in great improvement. Since these symptoms tend to regress spontaneously, the decision to perform sympathectomy may be safely postponed. If thinning of the skin appears within the first three months, sympathectomy should be performed. Otherwise alcohol block may be used for symptomatic relief. Deep-seated pain, which is often the principal disabling symptom, does not respond to sympathectomy. Sympathetic denervation produces beneficial effects on certain late symptoms but does not always prevent partial disability.

Penicillin in Tetanus.—Weinstein and Wesselhoeft report 2 cases of tetanus in which recovery followed treatment with large amounts of antitoxin, surgical excision of the wounds and administration of large doses of penicillin. Clostridium tetani could no longer be isolated from the wounds twenty-four hours after the first administration of penicillin. The already demonstrated antibiotic influence of penicillin on this organism in vitro appears to be confirmed in vivo. The use of penicillin in tetanus appears to be most valuable in cases in which multiple lesions not all of which can be removed by surgical means are present or in which no focus of infection is detectable. This antibiotic agent is not intended to replace the administration of antitoxin, excision of wounds, adequate sedation and maintenance of a normal state of nutrition and hydration but appears to be a highly important adjuvant to these other therapeutic measures.

New York State Journal of Medicine, New York

45:2591-2716 (Dec. 15) 1945

Extraperitoneal Cesarean Section, with Special Reference to Water Technic. R. J. Pieri and F. R. Irving.—p. 2645.
Clinical Study of Fifteen Cases of Sinusitis. E. C. McCullock.—p. 2656.

46:1-112 (Jan. 1) 1946

Treatment of Blood Dyscrasias. S. L. Vaughan.—p. 55.
Occurrence of Bacillus Welchi Gas Gangrene at Site of Penicillin Intramuscular Clyses. W. Mitchell, L. Pordy and M. B. Wallach.—p. 61.

North Carolina Medical Journal, Winston-Salem

6:469-504 (Nov.) 1945

Medicine and the Public Health in the Postwar World. T. Parran.—p. 469.
Doctors, Take Warning! G. W. Murphy.—p. 475.
Painful Ovulation—Not a Surgical Condition. P. McBee.—p. 476.
Management of Hypertension. V. S. Caviness.—p. 476.
Pathogenesis of Peptic Ulcer. J. E. Best.—p. 480.
Prevention of Eclampsia. A. F. Lee.—p. 482.
Bilateral Cryptophthalmus and Syndactylism: Case Report. A. T. Thorp.—p. 484.

6:505-546 (Dec.) 1945

Psychiatry in North Carolina. D. A. Young.—p. 505.
Parathyroid Adenoma: Clinical and Biochemical Discussion. F. M. Hanes.—p. 507.
Acute Incomplete Inversion of Puerperal Uterus: Report of Case, with Postmortem Findings. W. C. Thomas and D. E. Ward Jr.—p. 515.
Female Venereal Prophylaxis and Feminine Hygiene: New Applicator Using Soap with Sulfathiazole; Results in Cases of Vaginitis. W. L. Gould.—p. 518.

Oklahoma State Medical Assn. Jour., Oklahoma City

38:469-522 (Nov.) 1945

Benign Esophageal Strictures. L. C. McHenry and R. A. Clay.—p. 469.
Amino Acids—Their Clinical Indications and Uses. H. C. Hopps.—p. 474.
The Returning Veteran. H. M. Galbraith.—p. 481.

38:523-580 (Dec.) 1945

Management of Surgical Complications of Appendicitis. V. S. Counseller.—p. 523.
Elongated Uvula. L. C. Kuyrkendall.—p. 527.
Medicine and Social Changes. E. E. Irons.—p. 532.

Pennsylvania Medical Journal, Harrisburg

49:113-224 (Nov.) 1945

Treatment of Rheumatic Chorea. E. L. Bauer.—p. 113.
Closure of Surface Defects of Hand. H. May.—p. 116.
Otorhinoplasty in Field of Otolaryngology. R. A. Luongo.—p. 121.

49:225-384 (Dec.) 1945

Presidential Address. W. L. Estes Jr.—p. 241.
Severe Rheumatic Heart Disease in Children: Preliminary Clinical Report. Grace S. Gregg and F. J. Gregg.—p. 247.
Management of Neuropsychiatric Patient—Hospitalized or Ambulatory. H. C. Bell.—p. 250.
Intramuscular Urography. B. Levant and J. J. Lee.—p. 255.
Few Factors in Lid Repair. C. A. Rankin.—p. 258.

Proc. of Staff Meet. of Mayo Clinic, Rochester, Minn.

20:449-472 (Nov. 28) 1945

*Clinical Use of Streptomycin: Study of 45 Cases. W. E. Herrel and D. R. Nichols.—p. 449.
Protection in Roentgenoscopy. J. F. Bacon and E. T. Leddy.—p. 463.
Parenteral Administration of Gelatin. T. H. Seldon, J. S. Lundy, R. C. Adams and E. N. Cook.—p. 468.
Transurethral Surgery in 1944. J. L. Emmet, E. N. Cook, T. L. Pool and L. F. Greene.—p. 469.

Clinical Use of Streptomycin.—Herrel and Nichols did not encounter serious irreversible toxic effects from the use of streptomycin in 45 cases presenting a variety of infections. There were 8 cases of bacteremia, in 6 of which recovery occurred. Doubtful results were obtained in 2 cases of undulant fever associated with bacteremia. Good results were obtained in 10 of 13 cases of moderately severe and severe infections of the urinary tract due to a variety of pathogenic organisms. Satisfactory results were obtained in 4 of 5 cases of infection involving the tracheobronchial tree. The effect of streptomycin in 4 cases of syphilis was doubtful.

Rhode Island Medical Journal, Providence

28:875-944 (Dec.) 1945

Diagnosis and Primary Surgical Treatment of Injuries of Hand. W. E. Browne.—p. 875.
Hormones in Tuberculosis. P. F. Harrington.—p. 880.
Penicillin Treatment of Early Syphilis. D. W. J. Bell.—p. 884.
Rhode Island Second Injury Fund. E. I. Friedman.—p. 893.
Industrial Safety in Rhode Island. G. C. Worthington.—p. 907.

South Carolina Medical Assn. Journal, Florence

41:309-334 (Dec.) 1945

Hazards of Bed Rest. W. R. Mead.—p. 309.
Unilateral Agenesis of Kidney with Double Kidney and Uretrocele on Opposite Side and Genital Anomalies. M. Nachman.—p. 312.

Southern Medical Journal, Birmingham, Ala.

38:773-856 (Dec.) 1945. **Partial Index**

Pneumococcal Meningitis: Survey of 20 Cases. J. M. Weller and S. Palmer Jr.—p. 773.
*Penicillin Therapy for Vincent's Ulcers of Tonsils. G. F. Joseph. —p. 778.
*Further Studies on Folic Acid in Treatment of Macrocytic Anemia. C. F. Vilter, T. D. Spies and Mary B. Koch.—p. 781.
Cotton as Suture Material. V. D'Ingianni.—p. 786.
Simultaneous Ruptured Tubal Pregnancy and Intrauterine Pregnancy, with Subsequent Delivery of Normal Infant. G. T. Howard Jr. . —p. 788.
Use of Sodium "Vinbarbital" in Obstetrics. N. R. Davidson.—p. 790.
Fat Necrosis Studies: V. Effect of Soybean and Peanut Feeding on Blood and Urine Lipase of Rabbits and in Production of Fat Necrosis. M. P. Neal.—p. 793.
Psychiatric Salvaging of Industrial Manpower in Wartime. R. V. Seliger.—p. 799.
Leptospirosis: Report of Case from South Florida. J. H. Currens and R. C. Woodard.—p. 811.
Hereditary Deforming Chondrodysplasia. W. D. Stubenbord.—p. 816.
Report of 2 Cases of Paresis Treated with Penicillin. W. R. Rosanoff and J. K. Norman.—p. 819.
Burns Defined or Visualized. J. R. Green.—p. 822.
Critique of Free Skin Graft. J. F. Pick.—p. 827.
Intervertebral Disk Lesions: General Discussion and Consideration of Treatment in Military Service. E. Walker.—p. 832.
*Unusual Glandular Manifestations of Mumps: Extrasalivary Localization. H. J. Schmidt.—p. 834.
Narcolepsy. E. T. Brading.—p. 838.

Penicillin for Vincent's Ulcers of Tonsils.—Joseph selected patients for this series who had necrotic, ragged tonsillar lesions of the type commonly known as Vincent's ulcers. Patients with gingival lesions as the primary complaint were referred to the dental clinic for their entire treatment. The first 6 patients were hospitalized and given four 25,000 unit doses of penicillin intramuscularly at three hour intervals. All patients experienced symptomatic relief in from six to nine hours, and the lesion cleared up entirely in seven days. With these favorable results hospitalization was discontinued for subsequent cases, and efforts were directed toward simplifying the regimen. All patients henceforth were kept on full duty. During the first two months the mode of administration and size of dosage were varied in order to arrive at the most practical method and smallest effective dose. Ten patients received 50,000 units, 13 received 25,000 units and 3 received 12,500 units. Some of the 25,000 and all of the 12,500 unit injections were made directly into the tonsil capsule to determine whether this would increase the efficacy of the drug. Two patients were treated with penicillin by topical application. Five others were given the drug orally in cottonseed oil in doses of 50,000 units each before the next two meals when the stomach was empty. It was found that 100,000 units of penicillin in two 50,000 unit intramuscular doses three hours apart provide optimal treatment for Vincent's ulcers of the tonsil.

Folic Acid in Macrocytic Anemia.—Vilter and his associates administered synthetic folic acid (Lactobacillus casei factor) to 14 patients with macrocytic anemia in relapse. The group included both addisonian pernicious anemia and nutritional macrocytic anemia. The material was given intravenously, intramuscularly and orally. Thirteen of the 14 patients showed a positive hematologic response consisting of reticulocytosis and subsequent rise in erythrocytes, hemoglobin and leukocytes. Where treatment was continued, the regeneration continued to normal levels. Erythrogenesis occurred regardless of the route of administration of folic acid and regardless of the clinical classification as to pernicious anemia or nutritional macrocytic anemia. The responses to treatment paralleled those afforded by potent liver extract. Synthetic folic acid (L. casei factor) is a potent hemopoietic agent. It is probably no more effective than liver extract in the treatment of macrocytic anemia.

Unusual Glandular Manifestations of Mumps.—Schmidt reports the history of a boy aged 6 in whom epidemic parotitis was followed first by swelling of the submaxillary lymph nodes and later by femoral adenitis. Two other cases were seen during the same epidemic in which similar involvement of the femoral lymph nodes was noted without manifestations in the salivary glands. These cases not only demonstrate another manifestation of mumps but likewise substantiate the opinion that the infection is not to be considered a local disease with possible complications but rather a systemic disease capable of producing pathologic changes in many different and highly specialized tissues. The author cites reports which indicate that immunity is more a matter of immunity of previously involved glands than of a general or systemic condition. Frequently persons are encountered who have never contracted the disease even though repeatedly exposed. Considering the highly contagious character of the infection and the results obtained by Enders, it may be assumed that many patients have had the disease without salivary gland manifestations.

Surgery, St. Louis

18:663-794 (Dec.) 1945

*Surgical Treatment of Long Standing Deep Phlebitis of Leg: II. Supplementary Report. R. W. Buxton and F. A. Coller.—p. 663.
*Venous Pressures in Disorders of Venous System of Lower Extremities. M. D. Tyson and W. C. Goodlett.—p. 669.
Surgical Correction for Coarctation of Aorta. R. E. Gross.—p. 673.
Arteriovenous Fistula: Suture Technic for Producing Lateral Anastomosis; Experimental Study. R. A. Deterling Jr.—p. 679.
*Successful Removal of Foreign Bodies Within Pericardium: Report of 2 Cases. T. D. Watts and E. C. Toone.—p. 685.
Routine for Early Skin Grafting of Deep Burns. B. W. Rawles Jr. —p. 696.
Intrabilar and Related Segmental Anatomy of Lung. E. A. Boyden. —p. 706.
New Design for Raising Tubed Pedicled Flap. P. Gabarro.—p. 732.
Resuscitation of Severely Wounded Casualties. J. J. Lalich and J. M. Mason.—p. 741.
Peritoneal Absorption of Penicillin. B. G. P. Shafiroff.—p. 753.
Molded Bone Graft. A. J. Barsky.—p. 755.
Nylon Bone Suture. M. J. Rowe.—p. 764.
Herniation of Nucleus Pulposus: Refinement in Operative Technic. R. C. L. Robertson and W. G. Peacher.—p. 768.
Chylangioma Cavernosum Mesenterii: Report of Case and Review of Literature. J. M. Lubitz and R. W. Flynn.—p. 772.
Method of Retaining an Intravenous Needle in Situ. E. Sinaiko. —p. 777.

Surgical Treatment of Deep Phlebitis of Leg.—Buxton and Coller report observations on 24 patients with chronic phlebitis of the lower extremities. The largest numbers presented themselves because of chronic recurring ulceration around the ankle. Ligation of the left femoral vein was done most frequently. Two patients had bilateral vein ligations. The common iliac vein was ligated once. Seven patients with long standing phlebitis of both lower extremities underwent ligation of the inferior vena cava. Patients on whom vein ligation has been tried have been followed and observed during their postoperative period with much greater intensity and care than usual in this disease. This has undoubtedly influenced the end results. Had this not been done, the good results up to the present time might well have been no different than with other forms of treatment. How much the end results are influenced by the operative procedure and how much by the constant postoperative care cannot be stated. The noteworthy end result is the high incidence of healing of stasic ulcers. There has been immediate and permanent healing of a certain number of ulcers. In others healing has been delayed or ulceration has recurred and healing has taken place only after ligation of newly developed superficial varices. The results were most disappointing in those in whom ligation was done in the absence of stasic ulceration. A large number of this class of patients will eventually develop induration, pigmentation and ulceration, perhaps many years later. In these, venous ligation was considered an attempt not only at therapy but at prophylaxis. From the standpoint of therapy the treatment may be con-

sidered a failure. It remains to be seen whether subsequent ulceration has been prevented in these patients. A comparison between patients treated with femoral vein ligation, iliac vein ligation and caval ligation cannot be made at present. The magnitude of the operative procedure is considerably greater, the higher in the venous tree ligation is carried.

Venous Pressures in Disorders of Venous System of Lower Extremities.—Tyson and Goodlett usually took the venous pressure in one of the veins of the foot or ankle. The patient is placed in the supine position and the table adjusted so that a base line corresponding to the auricular level of the heart can be measured on the manometer. The largest caliber needle that can be introduced in the vein is used. The most satisfactory size is number 19. The authors use one of two methods. In one method the system of tubing is filled with isotonic solution of sodium chloride. The 3 or 4 inches of tubing to be attached to the needle is then filled with 2.5 per cent sodium citrate solution and the glass connector attached to the needle already in the vein. The solution in the glass tubing is slightly above the base line of the heart level. Blood is allowed to flow into the cannula and tubing, and the maximum elevation of solution in the glass tubing is read as the venous pressure. In the second method the system is filled with 2.5 per cent citrate solution and a three-way stopcock is used to connect the needle and the tubing. The citrate solution in the glass tubing is slightly above the expected venous pressure. The apparatus is then attached to the needle in the vein and the citrate solution allowed to run into the vein. When no further citrate solution runs into the vein, the pressure of the column of citrate then equals the venous pressure. The venous pressure in the lower part of the leg will rise when the femoral vein of the lower leg is occluded. A large number of pressure determinations were made. Venous pressure determination is important in the diagnosis of edema of the lower extremities. If the venous pressure is normal in the lower part of the legs after exercise it is fair to assume that the major venous channels of the lower part of the legs are patent and that the cause of the edema must be found elsewhere. Venous pressure determinations would appear to be valuable in following cases of venous thrombosis in the lower extremities during convalescence. It may be difficult to determine in which lower extremity a venous thrombus is present or whether the thrombus is present in both. Venous pressure determinations are useful in determining this point. Venous pressure determinations are more accurate than phlebograms to determine the patency of the venous system.

Removal of Foreign Bodies in Pericardium.—Watts and Toone report the histories of 2 soldiers, both aged 21, in whom foreign bodies were removed from the pericardial sac. Another case had been reported previously. At operation each of these patients showed extensive and dense adhesions between the epicardium and pericardium and around the foreign body which is thought to be responsible for the symptomatology and abnormal objective findings encountered. The patient's symptoms, the objective evidence of pericardial or myocardial changes and the possibility of future complications are to be balanced against the operative risk. Pain of a dull aching character in the low substernal and precordial areas, increased by exertion but without tendency to radiate to the neck or down the arms, was a common complaint of 2 of the patients. Following the surgical removal of the foreign body there was complete relief of pain. There was anxiety regarding the foreign body, and the men expressed a desire to have it removed, offered no objection to surgical intervention even though made well aware of the serious nature of the operation, and were most gratified after its successful completion. Surgical removal is advisable before the foreign body becomes encased in dense adhesions or fixed in an inaccessible area.

Wisconsin Medical Journal, Madison

44:1141-1256 (Dec.) 1945

Penicillin in Treatment of Meningitis. M. J. Fox.—p. 1161.
Treatment of Pilonidal Cysts. N. E. Bear and V. F. Woldman.—p. 1166.
Role of Demerol in Obstetrics. H. M. Carter.—p. 1170.
Renal Hypertension: Nephrectomies at Wisconsin General Hospital. C. E. McKeown.—p. 1173.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

57:197-244 (Nov.-Dec.) 1945

Pityriasis Rubra Pilaris and Vitamin A. A. D. Porter and E. W. Godding.—p. 197.

British Medical Journal, London

2:795-832 (Dec. 8) 1945

*In Vitro Sensitivity of Hemophilus Influenzae to Penicillin: Special Reference to Meningeal Strains of Pittman's Type b. M. Gordon and K. Zinnemann.—p. 795.
Meningitis Due to a Penicillin and Sulfonamide Sensitive Pittman b Strain of Hemophilus Influenzae: Recovery. D. G. McIntosh and Constance F. Drysdale.—p. 796.
Repatriation: Psychiatric Study of 100 Naval Ex-Prisoners of War. W. P. Mallinson and W. Warren.—p. 798.
*Sixth Nerve Paralysis After Spinal Analgesia. W. A. Fairclough.—p. 801.
Typhoid Complicated by Benign Tertian Malaria. A. S. Bookless and J. M. Naftalin.—p. 804.
Impressions of Surgery in West Africa. J. K. Willson-Pepper.—p. 812.

Sensitivity of Hemophilus Influenzae to Penicillin.—Gordon and Zinnemann examined 15 Hemophilus influenzae strains from the nasopharynx and 28 H. influenzae strains from bronchial secretions for penicillin sensitivity. The growths of 31 of these respiratory strains were completely inhibited by 2.5 units of penicillin per cubic centimeter of medium. Only 7 strains showed growths on mediums containing 5 units of penicillin per cubic centimeter, with evidence of considerable inhibition. The growths of 18 H. influenzae strains, 16 of which were of Pittman's type b and all of which were isolated from the cerebrospinal fluid, were completely inhibited on medium containing 5 units of penicillin per cubic centimeter. The growths of 16 strains were completely inhibited with 2.5 units of penicillin, the growths of 12 strains completely inhibited with 1 unit of penicillin, and only 3 strains completely inhibited with 0.5 unit of penicillin per cubic centimeter of medium. It is suggested that penicillin therapy is worthy of trial in cases of H. influenzae meningitis.

Sixth Nerve Paralysis After Spinal Analgesia.—Fairclough presents a theory which would account for the fact that the sixth cranial nerve often shows signs of injury after spinal analgesia earlier than any of the other cranial nerves and that it may do so even if its anatomic disadvantages do not exist. The varying stability of binocular vision makes it possible that any cerebral pathologic condition, even slight in degree, would cause a breakdown of the binocular system with resulting diplopia. Examination of these functions before and after spinal injection may prove of interest. Of the 10 patients studied 9 were examined after they considered that their eye condition had returned to normal. Each of them had some degree of esophoria and none had exophoria. The common symptoms following lumbar analgesia are headache, pain in the neck, dizziness, photophobia—the latter two symptoms may be due to threatening or partial diplopia—and diplopia. The 10 patients with paralysis of the sixth nerve appeared among 2,021 patients who had received spinal analgesia.

2:833-872 (Dec. 15) 1945

Survey of Fracture Treatment. C. M. Page.—p. 835.
Nutrition in Vienna in September 1945. M. Pyke.—p. 839.
*Toxic Effects of 2,2-bis (p-Chlorpheny!) 1,1,1-Trichlorethane (DDT) in Man. R. A. M. Case.—p. 842.
*Fatal Case of DDT Poisoning in Child, with Account of Two Accidental Deaths in Dogs. K. R. Hill and G. Robinson.—p. 845.
Observations on Keratoconjunctivitis: Cases Seen in Military Hospitals. R. J. Buxton.—p. 847.

Toxic Effects of DDT in Man.—Case states that DDT has been shown to be toxic to a variety of mammals. The main pathologic features are liver damage, loss of weight, anorexia, mild anemia, polymorphonuclear leukocytosis, and damage to the central nervous system. In the one case of human intoxication to be found in the literature, Wigglesworth reports heaviness and aching of the limbs, sleeplessness, "spasms of extreme nervous tension," prostration of such a degree as to confine

the sufferer to bed for a fortnight, and involuntary muscular twitchings over the whole body on at least three occasions. Recovery had not taken place at the end of the year. The victim had been exposed to concentrations of DDT in acetone and in powder form far in excess of levels that might reasonably be met with in the routine use of the insecticide. The problem under investigation was the possible toxic effect of the use of a distemper containing 2 per cent by weight of the dry film of DDT in circumstances where the paint would be covered with a thin film of oil, the ambient temperature would be such that personnel at risk would be largely unclothed, their skin would be oily and sweaty, because of cramped accommodation large areas of oily skin would come into contact with the paint, and efficient washing of the body surface could take place only at relatively infrequent intervals. Two healthy male subjects were employed for this investigation. During the control period no measurable changes took place apart from a fall in p_H in the urine. After exposure to DDT distemper, there occurred diminution of reflexes, alteration in auditory acuity in both subjects, and patchy peripheral anesthesia in one subject. The production of a fine tremor in one subject is also probably significant. A great transitory fall of systolic pressure was observed in both subjects. The hematologic observations are of greatest importance, because they suggest that hematologic examinations, employing siderocyte levels, hemoglobin and red cell estimations, reticulocyte counts and leukocyte counts, and also urinary indoxyl sulfate estimations might all be useful tests in the prevention or early diagnosis of DDT intoxication. These experiments show DDT distemper to be toxic only under special conditions, possibly more severe than would obtain in practice, and do not form the basis for condemnation of the widespread use of DDT if proper precautions are taken. They do, however, emphasize that DDT intoxication in human beings is a hazard to be considered and guarded against.

Fatal DDT Poisoning in Child.—Hill and Robinson report the case of a child, aged 1 year and 7 months, who found a bottle of 5 per cent DDT in kerosene and drank about 1 ounce. Within ten minutes he began to cough and vomit violently, whereupon he was given palm oil. In a short while coughing and vomiting ceased, but his general condition worsened, and at about 12:30 p. m. he became comatose and had convulsions. Later the stomach was washed out and atropine was given, but the child died. Death was due to pulmonary edema, probably from paralysis of the respiratory center. The lethal dose was approximately 150 mg. per Kg. of body weight of commercially pure DDT—an amount somewhat less than that found for experimental animals. Two fatal cases of chronic DDT poisoning in dogs are described, with a histologic picture of centrolobular necrosis of liver and tubular degeneration of kidney with considerable calcification.

Irish Journal of Medical Science, Dublin

239:647-678 (Nov.) 1945

Visceral Sensation. B. A. McSwiney.—p. 647.
Biochemistry Yesterday and Tomorrow. W. R. Fearon.—p. 659.
Etiology of Trachoma in Ireland. P. N. Menan.—p. 670.

Lancet, London

2:765-800 (Dec. 15) 1945

Hospital, Industry and the Injured Man: Surgeon's Thoughts on Rehabilitation. G. R. Girdlestone.—p. 765.
Resettlement of Disabled. J. W. T. Patterson.—p. 766.
*Clinical Value of Muscle Biopsies. R. E. M. Bowden and E. Gutmann.—p. 768.
Exposure of Posterior Horn of Medial Meniscus. J. Charnley.—p. 771.
Thrombocytopenic Purpura with Normal Bleeding Time: Recovery After Splenectomy. A. I. Suchecki and V. Glass.—p. 772.
Probable Relapse of Malignant Tertian Malaria After Thirteen Years. L. Nagley.—p. 773.
Orthopedic Treatment of Ankylosing Spondylitis. R. K. W. Kuipers.—p. 774.
*Louse Borne Relapsing Fever Treated with Calcium Gold Keratinate. M. Wolman, M. Omar and M. Abu-Taleb.—p. 775.

Clinical Value of Muscle Biopsies.—According to Bowden and Gutmann muscle biopsy besides giving information about the state of the muscle fibers, is a form of nerve biopsy, because nerve fibers or empty Schwann tubes or motor end plates are almost always found among the muscle fibers. In a series of 140 biopsies from 86 cases only 7 did not contain such elements. The presence of empty Schwann tubes is evidence of a degenerative lesion of lower motor neurones, and the finding of normal fibers and empty tubes indicates a partial lesion. Indications for muscle biopsy: (1) To determine the state of muscles where atrophy is advanced, or where a vascular lesion is suspected. Surgical repair of nerves or long continued physical treatment is valueless if the muscles have been irreparably damaged. (2) To aid in the diagnosis of the type of lesion in the nerve and to determine whether satisfactory regeneration is taking place in partial or recovering lesions. (3) To differentiate between paralysis of myogenic origin and disease of the lower motor neurone. (4) There are special indications for the use of biopsies in certain cases of poliomyelitis: it is possible to decide whether the state of the muscle is such as to make further physical therapy valueless; biopsies from long-standing cases of poliomyelitis have suggested that axonal regeneration can take place. A piece of the affected muscle is removed under local or general anesthesia, the size varying with the type and size of the muscle; if possible the piece should be at least 1 cm. long by 0.5 cm. wide and thick. The specimen is placed at once on a strip of cardboard to prevent distortion and fixed immediately in 10 per cent formol saline. If the piece is sufficiently large, half is used for frozen sections and the remainder embedded in paraffin.

Calcium Gold Keratinate in Louse Borne Relapsing Fever.—Wolman and his associates treated alternate patients (80 of a total of 160) with louse borne relapsing fever by intravenous injection of 0.5 Gm. of neosolganal in 5 cc. of distilled water. Two other groups of 20 patients each were given the gold preparation. One was given 1 Gm. of neosolganal in 5 cc. of water and the other 1 Gm. in 5 cc. of a 10 per cent solution of calcium thiosulfate. Toxic reactions were watched for and observed in two fifths of the aforementioned group of 80 patients. The reactions were mild. There was no significant difference between the reactions in those who were given the drug in water or in calcium thiosulfate. Neosolganal does not constitute a hazard to the patient. The patients were free from spirochetes and apyrexial within a short time (usually twenty-four hours or less) of the injection. The incidence of relapses in the treated group was significantly reduced. Three patients in the experimental group and one in the control group died. This difference is considered to be due to chance.

Proceedings of Royal Society of Medicine, London

39:1-58 (Nov.) 1945

Observations on Certain Rheologic Properties of Human Cervical Secretion. A. F. Clift.—p. 1.
New Facts Concerning Prognosis and Treatment of Carcinoma of Cervix by Radiation. M. Donaldson.—p. 10.
Surgical Aspects of Urinary Bilharziasis. R. O. Ward.—p. 27.
Medical Career of Jean-Paul Marat. H. P. Bayon.—p. 39.
International Biologic Standards: Prospect and Retrospect. P. Hartley.—p. 45.

Archives des Maladies du Cœur, Paris

38:105-148 (May-June) 1945

Diagram (PV) of Action of Intraventricular Pressure. L. Martin.—p. 105.
Disturbances of Sinus Rhythm and Variations of Pattern of Ventricular Complexes in the Course of Septal Deformity. J. Lequime, M. Segers and H. Denolin.—p. 108.
*Cardiac Myxedema and Hunger Disease. A. Tourniaire.—p. 114.
Malignant Endocarditis of Pulmonary Orifice in the Course of Fallot's Tetrad. P. Squlié and L. Fourestier.—p. 118.
Seven Cases of Cardiac Thrombosis Associated with Apparently Healthy Endocardium and with Acute Fatal Course. R. Letac.—p. 121.

Cardiac Myxedema and Hunger Disease.—Tourniaire reports a case of hunger disease characterized by emaciation, bradycardia, nocturia, edema of the legs, slight anemia and hypoproteinemia. Cardiac hypertrophy and a drop of the electric voltage in the absence of any sign of cardiac insufficiency suggested cardiac myxedema. The edema disappeared within one week as the result of rest and of the administration of liver extract and thiamine hydrochloride solution intra-

muscularly. The cardiac hypertrophy was not altered. The measurement of basal metabolism revealed a diminution of 35.8 per cent. Thyroid treatment was instituted. After twenty-three days of this treatment the heart shadow decreased considerably. The electrocardiogram demonstrated improvement. On the fifty-sixth day of the treatment the patient a metallurgic workman aged 56, gained 2 pounds (900 Gm.), the pulse rate was 80 and arterial tension was 150/90. Occurrence of myxedema in the course of hunger disease proves the part played by thyroid insufficiency in deficiency conditions and supports Van Bogaert's concept of alcoholic beriberi.

Monatsschrift für Psychiatrie und Neurologie, Basel

110:293-348 (No. 6) 1945

Psychologic Syndrome in Tumors of Frontal Lobes and of Diencephalon. G. de Morsier and A. Rey.—p. 293.
Clinical Significance of Cavum Septi Pellucidi. L. Benedek and L. von Angyal.—p. 309.
*Upper Limits of Normal Protein Content in Cerebrospinal Fluid. V. Kafka.—p. 325.
Spina Bifida Occulta with Atrophy of a Lower Extremity and Neurologic Crises. C. I. Urechia, L. Dragomir and T. Dragomir.—p. 340.

Protein Content of Cerebrospinal Fluid.—Kafka examined 500 cisternal fluids and found that the upper limit of the total protein content is 1.1 graduation marks in the cisternal fluid as compared to 1.3 graduation marks in the lumbar fluid. That would be approximately 26.4 mg. per hundred cubic centimeters for the cisternal fluid compared to 31.2 mg. per hundred cubic centimeters for the lumbar fluid, if the graduation mark of the special tube is accepted as equivalent to 24 mg. per hundred cubic centimeters. He designates his method of determination as "protein relation," because it is his aim to relate the individual values and compare them in different diseases. This method of protein relationship is suited for the determination of the upper limits of the total protein content. Various observations have indicated that for the determination of the protein relation it is essential not only to ascertain the centrifugation time and the number of revolutions but also to determine the protein content of a graduation mark. If this is done, great differences will not be detected between the results of the protein relation and the Kjeldahl determination. It is also pointed out that the different modifications of the Kjeldahl method involve certain sources of error. The author further mentions a serial method which is a simple control and directs attention to numerous minor manipulations that help to avoid errors.

Bol. Oficina San. Panamericana, Washington, D. C.

24:577-672 (July) 1945. **Partial Index**

*Results of Pulmonary Lavage in Bacteriologic Diagnosis of Tuberculosis. M. de Abreu.—p. 601.

Pulmonary Lavage in Diagnosis of Tuberculosis.—De Abreu performed pulmonary lavage on 80 patients with suspected pulmonary tuberculosis who either did not expectorate or whose sputum was negative for tubercle bacilli. One or 2 cc. of a 5 per cent tutocain solution was applied to the pillars of the fauces, the uvula and the pharynx. The lavage was performed five minutes later by introducing into the trachea by the supraglottic approach 20 to 40 cc. of isotonic solution of sodium chloride during inspiration. Cough and expulsion of contents from the lung were thus provoked. Tubercle bacilli were demonstrated in 19 out of 80 cases. Results were negative in fibrous and calcified pulmonary lesions and positive in the exudative or the fibrous exudative type, as well as in the presence of tuberculous cavitation.

Día Médico, Buenos Aires

17:1246-1265 (Oct. 29) 1945. **Partial Index**

*Cerebrospinal Fluid in Jaundice. R. González Bosch, E. D. Andía and Elvira Carri.—p. 1252.

Cerebrospinal Fluid in Jaundice.—González Bosch and his collaborators studied the cerebrospinal fluid of 15 patients with jaundice. The group included 2 patients with syphilis, 1 with neurosyphilis, 2 with cirrhosis of the liver, 3 with catarrhal jaundice, 6 with cancer of the liver, the bile ducts or the head of the pancreas and 1 with stone in the common bile duct. The changes of the cerebrospinal fluid in jaundice consisted in xanthochromia and the presence of bilirubin and bile salts. A relationship between the concentration of bilirubin in the blood and that in the cerebrospinal fluid was not present. The amount of sugar in the cerebrospinal fluid was normal even in cases in which the fluid contained bile salts.

Acta Medica Scandinavica, Stockholm

122:281-380 (Oct. 18) 1945

*Effect of Intravenous Injections of Acetylcholine in Man. II. Control of Crises of Paroxysmal Tachycardia. M. Segers, J. Lequime and H. Denolin.—p. 281.
Treatment of Thyrotoxicosis with Methylthiouracil. E. Meulengracht and K. Schmith.—p. 294.
Influence of Posture on Kidney Function: I. Fall of Diuresis in Erect Posture. C. Brun, E. O. E. Knudsen and F. Raaschou.—p. 315.
Id.: II. Glomerular Dynamics in Passive Erect Posture. C. Brun, E. O. E. Knudsen and F. Raaschou.—p. 332.
Abnormal Electrocardiogram: III. Clinical Significance of Right Axis Deviation. K. Larsen and P. Magnusson.—p. 342.
*Weltmann's Serum Coagulation Reaction—A Simple Test of Considerable Clinical Value. R. Berlin.—p. 360.

Control of Paroxysmal Tachycardia with Acetylcholine.—Segers and his co-workers report 6 cases of paroxysmal tachycardia of extraventricular origin in which control of the crisis was obtained within less than thirty seconds of the time of intravenous injection of 0.02 Gm. of acetylcholine. In cases in which immediate control cannot be obtained, injections must be repeated at three to four minute intervals with increasing doses of 0.04, 0.06, 0.08 and 0.1 Gm. The dose may vary from 0.01 Gm. to 0.1 Gm., but in the same patient the required dose does not vary from one paroxysm to another. Mild secondary reactions were limited to attacks of coughing, nausea, a sensation of emptiness or of warmth in the head or a few palpitations. The absence of dangerous sequels to the injections is due to the very rapid destruction of the acetylcholine by the organism. Acetylcholine is much better tolerated than acetylmethylcholine chloride (mecholyl) or carbaminoylcholine chloride (doryl). The constancy of the favorable results, the mild and brief secondary reactions and the rapid control of the paroxysms suggest that acetylcholine is to be considered the agent of choice in the treatment of paroxysmal tachycardia.

Weltmann's Serum Coagulation Test.—Berlin reports experiences with the Weltmann test at the department for internal diseases of the district hospital in Lidköping, Sweden. A maximum shortened coagulation band was observed in pneumonia, exudative pleurisy, septic processes and nephrosis. Eleven of 14 cases of coronary infarction gave a shortened coagulation band on the fourth to the fifth day after the onset of the infarct, and the same reaction continued for a considerable time. The sedimentation reaction became normal much earlier. Three cases did not give a shortened coagulation band, but 1 case gave a shortened coagulation band a day earlier than the demonstration of the infarct by the electrocardiogram. A solution for the controversy with regard to the coagulation band in myeloma is suggested: Myeloma associated with nephrosis gives a shortened coagulation band, and myeloma without this complication gives a lengthened coagulation band. Weltmann's test is of great importance in pernicious anemia: 88 of 96 cases of various stages of remission, as well as of recurrence of pernicious anemia, gave coagulation band values around 7 or above 7. A shortened coagulation band suggests a malignant process. The Weltmann test aids in the differential diagnosis of jaundice. The author reports 53 cases of hepatocellular damage: 49 cases of hepatitis, 1 case of jaundice due to neoarsphenamine, 1 case of icterus intermittens juvenilis (Meulengracht) and 2 cases of yellow atrophy of the liver. Coagulation bands longer than 7½, according to Weltmann, are typical for these conditions. Only 10 of 53 cases (20 per cent) gave shorter values. Twenty-three of the author's 27 cases of obstructive jaundice on the contrary showed normal or shortened values of the coagulation band. In 4 cases of this group (15 per cent) the coagulation values were 7½ and 8 and thus were misleading.

Book Notices

Clinical Neurology. By Bernard J. Alpers, M.D., Sc.D., Professor of Neurology, Jefferson Medical College, Philadelphia. Cloth. Price, $8. Pp. 797, with 232 illustrations. Philadelphia: F. A. Davis Company, 1945.

Here is a new textbook of neurology which is well organized and thoroughgoing. It should receive a cordial reception. It will prove most useful to both students and practitioners. It is clearly written and well illustrated and has a good index. The typography is pleasing. The book has several valuable characteristics which differ from most other neurologic textbooks. Among these is the emphasis on symptomatology, on the clinical manifestations of nervous diseases and on differential diagnosis. There is one chapter, the fourth, devoted to a discussion of headache, vertigo, coma and pain. There are numerous tables enumerating signs and symptoms of various diseases and outlining the principal considerations in differential diagnosis.

In spite of these many favorable aspects of the book, and they greatly outnumber and outweigh the unfavorable ones, there is much room for improvement. There is much unnecessary and at times tedious repetition. This is constant in the text in little things. In a larger way, probably the most obvious example is the almost word for word repetition of the discussion of Sydenham's chorea on pages 383-385 and 620-623.

Some of the more specific criticisms which should be noted are the omission of the discussion of the surgical treatment of Ménière's syndrome on pages 124-126, the statement on page 200 that the pain of trigeminal neuralgia often arouses the patient from his sleep, the inclusion on page 201 of a discussion of jaw-winking reflex in the section on trigeminal neuralgia and the uncritical discussion of the treatment of tabes dorsalis on page 256. This lack of critical presentation of material collected from the literature is notable in several places and is serious in a book for students and general practitioners. On page 410 in table 39 there is reproduced a compilation of the contributory causes of cerebral hemorrhage which can hardly fail to give the student an erroneous impression. As the text indicates, arterial hypertension is by all odds the most common contributory cause of such hemorrhages and cerebral aneurysm is probably next. This is hardly a conclusion to be drawn from this table. On page 425 in table 41 similar misinformation is presented. In the table arteriosclerosis is a factor in only 54.7 per cent of the cases of cerebral thrombosis. In the immediately subjacent text it is stated that sclerosed cerebral vessels were found in 98.6 per cent of such cases. Similarly a tabulation on page 638 of precipitating factors in multiple sclerosis gives an inaccurate picture of the development of that disease. On page 697 the author correctly states that vitamin E is of little value in the treatment of amyotrophic lateral sclerosis and then proceeds to encourage the use of this worthless form of therapy by outlining in detail the method of administration. On page 752 the questionable clinical symptomatology of "benign frontal hyperostosis" is discussed at length and as though the direct relationship between the hyperostosis and the symptoms detailed was an accepted fact. In the discussion of extradural hemorrhage on pages 344-345 and of subdural hemorrhage on page 351, it is stated that such patients are "in shock," obviously with a most erroneous concept of what shock is. Patients are not in "profound shock" who have "a fall of the pulse, with a rise in blood pressure." Figure 110 would be more intelligible to most readers if it was inverted. The discussion on page 375 of mumps encephalitis and meningitis is confused and confusing.

However, this is a useful book, well organized and containing much valuable information.

The Hospital Purchasing File 1945-1946. Established 1919 as The Hospital Yearbook by The Modern Hospital Publishing Co., Inc. Directory of Hospital Products, Manufacturers' Catalogs, Reference Data. Twenty-third edition. Boards. Various pagination, with illustrations. Chicago: Purchasing Files, Inc., [n. d.].

This volume on hospital products and purchasing is a continuation of the Hospital Yearbook originally established in 1919. As in previous years, the book contains a vast amount of information including a directory of hospital equipment and supplies, an alphabetical list of manufacturers and distributors and twenty-two groups of manufacturer's catalogues classified on a departmental as well as a functional basis. The catalogues relate to administrative departments, food preparation and service, housekeeping, laundry, building construction, maintenance and repairs, plant operation, professional equipment and other facilities pertaining to surgery, obstetrics, hospital nurseries, anesthesia, physical and occupational therapy, and pharmacy, x-ray and laboratory departments. Featured also are special articles, references and plans for individual departments, check lists of hospital equipment and supplies, requirements for a 100 bed general hospital, and directories of the principal hospital associations and the federal and other national agencies serving the hospital and allied fields. The book is an excellent source of information and reference for hospital administrators and other personnel concerned with the services of supply, maintenance and hospital buying.

A Textbook of Surgery. By John Homans, M.D. Compiled from Lectures and Other Writings of Members of the Surgical Department of the Harvard Medical School. With a Special Bibliographical Index. Sixth edition. Cloth. Price, $8. Pp. 1,278, with 530 illustrations by Willard C. Shepard and others. Springfield, Ill., Charles C Thomas, 1945.

This excellent textbook of surgery is now in its sixth revision in fourteen years. This is indicative of the state of flux existing in the entire field of medicine. In surgery the recent accentuation of specialization makes the creation and revision of a general textbook on the subject increasingly difficult. This is reflected in the retention of outmoded concepts, a lag in correlation with recent advances in basic sciences and a reluctance to include newer treatments. The author has admirably overcome these objections in previous editions and has done considerably better in this one. It is pleasing to note the inclusion of lessons learned from the war, not as afterthoughts, but as dynamic factors in the modern surgical management. Fundamentally in outline and pagination there has been little change. The writing, as always, is clear and descriptive. Certain outmoded illustrations and descriptions have been eliminated to good advantage. A word about the excellent section on anesthesia by Dr. Knight should be included. It can be said without hesitation that this basic teaching contribution to the field of surgery has more than maintained its previous standards of usefulness.

Personality in Arterial Hypertension. By C. A. L. Binger, N. W. Ackerman, A. E. Cohn, H. A. Schroeder and J. M. Steele. Psychosomatic Medicine Monographs [Second Series, No. 8]. Cloth. Price, $3. Pp. 228. New York: American Society for Research in Psychosomatic Problems, 1945.

This monograph is a contribution to the field of psychosomatic medicine with 24 case histories and tables. The evidence, which is detailed, establishes conclusively the importance of psychologic causes for hypertension and explains many of the cases that would have been called in an earlier period essential hypertension. One of the patients in the series was investigated by psychoanalytic technics. The authors do not conclude that the disorder of personality is the cause of the hypertension; they conceive rather that the psychologic disorder and the physiologic disorder may represent reflections of a basic failure foreshadowed early in life.

Requirements of Premarital Legislation. By Margaret R. Zwally, M.A., and John F. Mahoney, M.D., Director, Venereal Disease Research Laboratory, United States Marine Hospital, Staten Island, N. Y. United States, Federal Security Agency, Public Health Service Bulletin No. 98. Paper. Price, 10 cents. Pp. 20. Washington, D. C.: Supt. of Doc., Government Printing Office, 1945.

The Venereal Disease Research Laboratory, U. S. Marine Hospital, Staten Island, New York, presents in this pamphlet a brief analysis of state laws requiring premarital physical examinations and blood tests as they relate to the venereal diseases. Information in summary form is given relative to the qualifications of physicians who may collect the required specimens or perform the required examinations, the laboratories approved for making the required tests and where the required forms may be obtained. Information is also given in tabular form concerning the type of examination required, the time needed to complete arrangements, appearance in person required to obtain license and source of information concerning waivers and so on. The material is current as of Jan. 1, 1945 and prior to publication was submitted for approval to the respective state health offices.

Red Surgeon. By George Borodin. Cloth. Price, $4.50; 15s. Pp. 224, with 19 illustrations. Forest Hills, N. Y.: Transatlantic Arts; London: Museum Press Limited, 1944.

George Borodin and Maxim Murov got to know and admire each other early in boyhood. The friendship was a clandestine one, for George was the son of a nobleman and Maxim the son of a revolutionary. When the revolution came, Borodin immigrated to England and in time became a prominent surgeon. Murov remained in Russia and in his turn soon came to occupy the position of one of the most gifted young surgeons and research workers. In the summer of 1942 the Germans were making their second great attempt to sweep everything before them. About this time Borodin received a bulky package which also contained a letter. It was from Murov: "I am writing in a little village in the southern sector. We have fought here for days and now the end must come. In front of us are Germans, behind us are Germans, to the left and to the right of us are Germans. Each hour brings the steel ring a little closer. There are not many of us left, and none of us will ever be prisoners. Some of us will die, as our comrades have died, not fearing death. Whichever is my fate, I am ready for it."

The second part consists of Murov's diary, translated and edited by the author. Two features of it should be of particular interest to the reader. One deals with the organization of the military medical service of the Soviet Union and the other with the man Murov. The principle of bringing fully equipped hospital units to the very front, and the principle of specialization, as practiced by the military organization in the Soviet Union, are well known here and are not unique with them. Of greater interest is the progress of a man from the cloister of the laboratory to the cauldron of the battlefield. One experiences in it first a shock and horror of war on a sensitive and discerning soul, and then the gradual acclimatization. Murov, primarily a scientist, a surgeon and a lover of humanity, slowly becomes a fighter and is the epitome of his people. The woman doctor Irina, a remarkable woman indeed, symbolizes the modern Soviet woman, seeing no reason why the burdens that men bear should not also be borne by women. She died a soldier's death. The book is an interesting psychologic study of a fine character symbolic of his profession.

Men Without Guns. By DeWitt Mackenzie, War Analyst of The Associated Press. Descriptive Captions by Major Clarence Worden, Medical Department of the United States Army. Foreword by Major General Norman T. Kirk, Surgeon General of the United States Army. Cloth. Price, $5. Pp. 47, illustrated with 137 plates from the Abbott collection of paintings owned by the United States Government. Philadelphia & Toronto: Blakiston Company, 1945.

Twelve of the artists who traveled with the medical corps of the Army and the Navy during the war and who showed in paintings made in the scene of battle the doctors, the nurses and the men of the medical corps in action are represented in this magnificent album of paintings of doctors at war. Of the plates, 118 are in full color. The project was approved by Surgeon General Kirk and sponsored by the Abbott Laboratories, which paid for the making of the paintings and then donated them to the United States government. Accompanying the pictures is a brief text which includes some account by the artists of their own experiences. The areas covered include the campaigns in the South Pacific and in Italy, Normandy and Germany. The paintings bring to life many an action that seems in photography without human sentiment. These paintings have power to stir emotion beyond anything that comes from a photograph. To the 60,000 physicians who served in the war they will be an enduring reminder of experiences that are epochal even in the lives of men to whom crises come every day.

A Handbook for Dissectors. By J. C. Boileau Grant, Professor of Anatomy, University of Toronto, Toronto, and H. A. Cates, Associate Professor of Anatomy, University of Toronto. Second edition. Fabrikoid. Price, $2.50. Pp. 390, with 10 illustrations. Baltimore: William Wood & Company, 1945.

This small book was originally intended to be used in conjunction with "A Method of Anatomy" for the purpose of supplying additional directions to dissectors. The present edition has been thoroughly revised and does not contain page and figure references to the larger book. This accomplishes two things. First, it is now possible for the present edition of the handbook to gain recognition in its own right. Second, the handbook may now be used as a guide for dissectors in schools where the "Method of Anatomy" has not been adopted as a textbook. Enough information has been supplied for the proper orientation of the beginner. The more fundamental structures have been indicated by a systematic discrimination in the use of bold type. The directions are clear and concise. This book should be of great value to students who are not furnished with directions for dissection by their own teacher.

Using Standards and Labels: A Problem of the Modern American Consumer. A Unit for High School Students. Consumer Education Series Unit No. 6. Paper. Price, 25 cents. Pp. 128, with illustrations. Washington, D. C.: Consumer Education Study, National Association of Secondary-School Principals, A Department of the National Education Association, 1945.

Publications of the Consumer Education Study of the National Association of Secondary-School Principals of the National Education Association are intended to promote consumer education, which is undergoing rapid development in secondary schools. Because the content of courses varies with the school, those responsible for this series of teaching-learning units have concentrated on general principles underlying consumption and have not concentrated on the skilled purchasing of specific commodities. The units are intended to help young people to become more intelligent and conscientious consumers. The Consumer Education Study, which is financed by funds from the National Better Business Bureau, has prepared in this unit an interesting survey worthy of reading by the general population; its use should not be confined to secondary schools. It is accurate, informative and provocative; it will force the reader to appreciate the need of scientifically developed standards and the value of purchasing products which meet these standards.

The Person in the Body: An Introduction to Psychosomatic Medicine. By Leland E. Hinsie, M.D., Professor of Psychiatry, College of Physicians and Surgeons, Columbia University. New York. Cloth. Price, $2.75. Pp. 263. New York: W. W. Norton & Company, Inc., 1945.

Here for the average American physician is a good consideration of the fundamentals of psychosomatic medicine. The book is well written, the cases are well selected and the material is definitely pointed toward the general practitioner. One of the most valuable chapters is the one headed "Varieties of Psychosomatic Syndromes." Other important chapters are called "The Body Protects the Person in It" and "Types of Neurotic Personalities." A final chapter entitled "Your Part in Psychotherapy" is directed particularly to the patient who requires psychosomatic medicine.

The Yearbook of Psychoanalysis. Volume I. Managing Editor, Sandor Lorand, M.D. Cloth. Price, $10. Pp. 370. New York: International University Press, 1945.

Under the editorship of Dr. Lorand there are here collected from a variety of publications in the field of psychoanalysis a number of important essays. The present volume covers the years 1942 through 1944. Future volumes are to be concerned only with current contributions of the previous year. Many of the leading American authorities in the field of psychoanalysis and psychosomatic medicine contribute, and several of the essays are concerned largely with war.

A List of Books and Pamphlets on the History of Surgery and Orthopedic Surgery, with Supplement, Additions and Corrections. The Collection of Dr. H. Winnett Orr, M.D. Second edition. Cloth. Pp. 207, with illustrations. Lincoln, Nebraska: The Author, 1945.

This volume is essentially a catalogue of works on the history of surgery and orthopedic surgery in the library of Dr. H. Winnett Orr. It includes as well many books somewhat remote from that field. A striking feature of the catalogue is the reproduction of title pages of many of the earlier publications.

A Surgeon Looks at Life. By Richard A. Leonardo, M.D., Ch.M., F.I.C.S. Cloth. Price, $2. Pp. 128. New York: Froben Press, 1945.

Dr. Leonardo presents fifteen chapters which represent fifteen philosophical essays on the subjects discussed. They range from considerations of faith cures and euthanasia to life after death and building a good life.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

RELAPSE WITH VIVAX MALARIA

To the Editor:—I am a medical officer of the Army of the United States and served overseas nineteen months in the Southwest Pacific area. While overseas we all took atabrine regularly to suppress symptoms of malaria. When I left the theater it was recommended that atabrine be continued for a period of twenty-eight days after arriving in the United States. I continued taking atabrine for forty-five days after my arrival and discontinued taking it Oct. 15, 1945. On November 6 I developed chills and high fever and was admitted to the hospital with the diagnosis malaria tertian, new. I shall be discharged within the next few weeks and have contemplated settling in Texas or some other Southern state. Are there any data as to the recurrences of malaria, disregarding new infections, with relationship to climatic conditions? Would it be more advisable to settle in a Northern state rather than in a Southern state? Major, M. C., A. U. S.

ANSWER.—The history of relapsing with vivax malaria two months after leaving the endemic area is common. As a matter of fact, 1.7 per cent of 2,579 patients at the Marine Barracks, Klamath Falls, Ore., had their initial attack over one year after leaving the endemic area. The use of atabrine after all chances of being reinfected are no longer possible only insures freedom of clinical symptoms as long as taken. It does not cure.

There is no conclusive evidence that recurrences of malaria are any more frequent or persistent in the Southern than in the Northern states, if reinfection possibilities are excluded, although there is some indication that altitude is beneficial, as it stimulates the hemopoietic system. Data to date indicate that Southwest Pacific malaria is self limited but unusually persistent. There is some evidence that rational therapy should consist in the treatment of relapses as they occur rather than continuous suppressive medication.

HYPERPIGMENTATION OF UNCERTAIN ORIGIN

To the Editor:—A woman aged 50 has been taking diphenylhydantoin (dilantin) sodium 0.1 Gm. capsules twice daily for thirty-two months with good control of epileptic seizures. She has been using Roux for many years as a hair dye. She is naturally of dark complexion and claims that her skin in the exposed area, i. e. above the clavicle and extending up into the cervical region, is becoming more deeply pigmented. There does seem to be an increased area of pigmentation in this region. Physical examination is negative. I myself do not feel that there is a pathologic pigmentation but that the patient has an antipathy toward diphenylhydantoin and seeks an excuse to discontinue it. Could either diphenylhydantoin sodium or Roux cause a disturbance of pigmentation?
M.D., New York.

ANSWER.—A rapid survey of the literature does not reveal reports of increased pigmentation following the use of diphenylhydantoin sodium. Hyperpigmentation from the dye would probably follow an inflammation from an induced dermatitis venenata or contact dermatitis. If so, the dermatitis and postinflammatory pigmentation should have been present near the hair line and on adjacent parts besides those described as actually involved. Other causes for a dermatitis venenata too mild to be conspicuous may be present. Finger nail polish commonly affects the region of the eyelids, but the neck too is frequently an affected site. Chloasma may produce such hyperpigmentation. The color is brownish, unless the degree is intense. Then the hue is more blackish. The discoloration in this disorder is more apt to occur in poorly defined patches on the face. It accompanies usually, but not always, either pregnancy or inflammation in the pelvis. When neither one of the latter is present, the cause is difficult to find. So-called berlocq dermatitis may be the cause of the hyperpigmentation described in the query. This type of reaction occurs in some persons who become sensitized to ultraviolet rays after the use of essential oils, such as are present in cologne or perfumes. The sites at which these are applied are the ones which become hyperpigmented. A preliminary dermatitis may not precede the increased pigmentation or may be so mild as to escape attention. A condition called Riehl's melanosis may occur on exposed parts and was described as a war melanosis. Another disease probably the same as the war melanosis or similar to it is the poikiloderma of Civatte. In this the hyperpigmentation occurs on the sides of the neck and face. The discoloration is reticulated, or netlike. A more accurate description of the form and color of the increased pigmentation would be helpful in order to evaluate better some of the many possible causes of this discoloration.

CRACKS AND FISSURES OF THE NASAL VESTIBULE

To the Editor:—I have had several patients with a small crack inside the top of the nose. In at least 1 case a dermatologist was consulted. I have not had success in treating these cracks, which are extremely chronic or recurrent. Can you tell me anything of the etiology and treatment?
F. L. R. Roberts, M.D., Spirit Lake, Iowa.

ANSWER.—The cracks or fissures described are to be considered as a form of dermatitis of the nasal vestibule and are accompanied by pain, redness, excoriation and crusting. The interior of the nose should be searched for the presence of undue secretion such as is seen in purulent sinusitis and allergic states. It is these states that are thought to be the underlying causes of the vestibulitis.

The treatment of the fissures themselves consists in applying silver nitrate solutions in varying strengths (5 to 20 per cent) and then following with applications of a mild ammoniated mercury ointment (2.5 to 5 per cent). Instead of silver nitrate, some advocate the use of stronger caustics such as trichloroacetic acid (50 to 90 per cent). Lastly the actual cautery may be tried in the more stubborn instances in which granulations have arisen on the borders of the fissures. The underlying sinusitis or allergic state also should receive attention.

PRECOCIOUS PUBERTY

To the Editor:—Please send information on treatment for halting premature puberty. The girl is 5 years old with fairly well developed signs of puberty, pubic hair ½ to ¾ inch long, pointed breasts and shaped hips and legs. She has been having abdominal cramps at regular intervals for six months; no menses have been noted as yet. The father is normal. The mother menstruated at the age of 11. The mother had to take thyroid and pituitary during pregnancy.
M.D., New York.

ANSWER.—Isosexual premature or precocious puberty in girls is usually the result of an ovarian tumor of the granulosa or theca cells or due to a constitutional condition in which there are no demonstrable organic changes. Usually the precocity from an ovarian tumor occurs about the ages 8 to 10, and rarely at the age of 5. If such a tumor can be ruled out through pelvic examination, diagnosis would then be constitutional premature puberty. Up to recent years no treatment for this condition has been recommended. However, it would seem quite likely that the administration of androgens such as testosterone propionate would be useful in controlling the abdominal cramps recurring each month as well as delaying other signs and symptoms of puberty. Such treatment should be attempted cautiously, since relatively little is known regarding the dosages of androgens in girls at this early age. It is suggested that 10 mg. of testosterone propionate might be administered at weekly intervals and increased slowly if there are no changes in the ovarian cycle. If this dosage is successful, the patient may be maintained on methyl testosterone orally, about 5 mg. daily. After several months of therapy a rest period should be instituted and treatment resumed on return of symptoms. Overdosage can be recognized by the appearance of acne, lowered voice and hirsutism, and treatment stopped if these appear. It can be started later at a lower level if necessary.

CARE OF BED PANS

To the Editor:—I would appreciate it if you will let me know whether there is any procedure or recognized system of washing or sterilizing bed pans each time they are used and after the patient leaves the hospital when that bed pan will be used by another patient.
Oscar Gottfried, New York.

ANSWER.—In one large teaching hospital, bed pans are kept in a rack in the lavatory connected with the room where the patient is in a private room and cleaned as indicated. They are sterilized after the patient leaves the hospital. In the wards, bed pans are in a utility room. After use, the pan is cleaned, sterilized and replaced on the rack.

TUBERCLE BACILLI H 37RV

To the Editor:—Please tell me what is meant in tuberculosis study by strain H 37RV.
H. H. Schultz, M.D., Ingleside, Neb.

ANSWER.—By H 37RV is meant a strain of tubercle bacilli of human type disassociated from the well known Saranac H 37 strain by William Steenken Jr., which grows in the form of rough colonies and has the virulence characteristic of a human type tubercle bacillus.

COLOSTRUM PREGNANCY TEST

To the Editor:—Can you give me an opinion concerning the reliability of the Falls-Freda technic for the skin test diagnosis of pregnancy as manufactured and distributed by the Sherman Laboratories of Detroit?

Paul J. Bronson, M.D., Terre Haute, Ind.

ANSWER.—According to the claims made for the Falls-Freda pregnancy test a diagnosis of pregnancy can be made following the intracutaneous injection of an extract of colostrum, a wheal indicating pregnancy, and its absence a negative test (Falls, F. H.; Freda, V. C., and Cohn, H. H.: *Am. J. Obst. & Gynec.* **41**:431 [March] 1941). These claims have not been confirmed by a number of investigators, including Weisman and Snyder (*ibid.* **42**:738 [Oct.] 1941). In spite of this lack of confirmation the advertising has induced many physicians to purchase the test for clinical use. No other skin tests for pregnancy have proved reliable in which either extracts of placenta or the urine of pregnant women is used. The biologic tests for pregnancy involving the use of rats, mice and rabbits are still the most practical and reliable.

FACIAL TIC

To the Editor:—A white man aged 43, a druggist, has had a facial tic for the past ten years in one side of the face involving the eye, the muscles of the face, the platysma and the occipital muscles. This tic is both clonic and tetanic in character, and the spasm occurs every ten minutes and lasts about three minutes. The spasm starts with clonic contractions and gradually goes into the tetanic type, shutting the eye completely for a minute. The patient has no pain with this tic. He is intelligent and has no neurotic background. The eyes, ears and nose are essentially normal. He was treated for frontal sinusitis on several occasions. A nose and throat physician took an x-ray of the sinuses eight years ago and the report read "left sphenoid and posterior ethmoiditis; polyp, moderate size, in right antrum." He is in good health. A Hinton test is negative for syphilis. A neurologist was consulted, and he advised cutting the facial nerve, using the spinal accessory nerve to get impulses through the peripheral fibers and suspending the face with fascia so that the loss of the facial nerve would be completely disguised. The patient refused to have the facial nerve cut. What is the latest procedure in treating such a tic? Will a nerve crushing or stretching help? How about alcohol injections? Will any medicine alleviate, at least temporarily, facial tics? Should neostigmine be tried in this case?

M.D., Massachusetts.

ANSWER.—This is the description of a typical and severe hemifacial spasm. The cause of the condition is not clear, but it seems most likely that it results from some irritation of the facial nucleus in the brain stem. In the milder cases sedatives may prove of some benefit, but in the main medical treatment in all forms has been disappointing. Any procedure which interrupts the function of the facial nerve such as cutting the nerve, crushing it or injecting alcohol will stop the spasm. However, all of these cases entail a facial paralysis of varying degrees of permanence involving sections of the facial nerve, and anastomosis with the spinal accessory nerve would seem to be the procedure of choice. But as the patient refuses to have the nerve cut all of these operations would seem to be excluded. In any event none should be undertaken until after the nerve has been temporarily paralyzed with procaine so that the patient may be fully aware of the nature of the facial paralysis.

References:

Ehni, George, and Woltman, H. W.: Hemifacial Spasm, *Arch. Neurol. & Psychiat.* **53**: 205 (March) 1945.

Coleman, C. C.: Surgical Treatment of Facial Spasm, *Ann. Surg.* **105**: 647 (May) 1937.

GOGGLES FOR UNDERWATER SWIMMING

To the Editor:—I am anxious to get a treatment for a pair of special lenses for eye glasses. This idea is that I enjoy under water swimming and would take even more pleasure in it if it was possible for the normal human eye to focus when a watery medium is in contact with the cornea. Unfortunately, it can't be done; and furthermore the ophthalmologists whom I happened to consult couldn't compute a treatment for the lenses. I have no visual defect and so the only consideration would be what convexity needs to be put up to accommodate for the diminished refraction when the eyes are immersed. Perhaps the question How far in front of the corneas should the lenses be placed? needs to be answered. I am not interested in contact lenses if ordinary spectacles can do the job.

Glenn J. Potter, M.D., Los Angeles.

ANSWER.—There is no treatment that can be applied to lenses that would in any way change the refraction of the glass, which answers the first sentence of the inquiry. Contact lenses certainly would not alter the ability to see under water. The only possibility is that a pair of goggles could be used under water which are more or less of a protection against eye infections and irritation due to continual or long periods of swimming. Such a goggle may be obtained from Abercrombie and Fitch, which is in the form of a rubber goggle fitting snugly so as to eliminate water coming in contact with the eyes.

PAINS IN THIGHS WITH LYMPHADENOPATHY

To the Editor:—A white married woman aged 23 complains of severe aching and cramping pain in both thighs while at work. She is a beauty operator and has been working quite hard, and part of the time she may be standing quite still for some minutes, when the pain becomes worse. On examination there are no varicose veins and no obesity (weight 120 pounds, or 54 Kg.). There are several palpable tender lymph glands in the popliteal space and extending up the posterior side of the thigh. There is no lesion of the skin where infection might have gained entrance. There is a mild endocervicitis. The rest of the examination is essentially negative. I am unable to account for the pain. Can you suggest from these meager findings what might be the probable diagnosis or what other examination might reveal the diagnosis? M.D., Washington.

ANSWER.—Any explanation of the symptom on the basis of the facts stated encounters some objection. The tender lymph glands in the popliteal space must mean infection below this level unless there is generalized lymphadenopathy, which the correspondent has not reported. In any event the infection which would produce these glands must lie below the level of the thigh. The same objection must be raised against a possible circulatory obstruction. Any circulatory obstruction in the pelvis, where it must be to produce bilateral pain, would produce pain below the level of the thigh. Aching and cramping pain brought on by work is suggestive of a circulatory deficiency, and in spite of the lack of pain in the lower part of the leg it might be worth while to test the circulation by means of histamine flares or estimations of the skin temperature.

The other possibility that suggests itself is some involvement of the nerve supply. Again the bilateral distribution militates against such a possibility, but it is possible that a bilateral bony lesion such as an osteoarthritis (unusual in a patient of this age) might produce such symptoms. A lesion of the cauda equina or the conus medullaris must be considered, and a thorough neurologic examination is indicated.

Lastly the signs might be due to postural causes or to a congenital deformity of the lower lumbar spine. This also should be disclosed by x-ray examination.

TRAUMA AND HEART DISEASE

To the Editor:—A recent case in which I am interested, involved an award made by a workmen's compensation court to a petitioner who suffered a strain on the left side while operating a motor truck. In attempting to steer the vehicle he was driving around a sharp turn, it was necessary for him to brace one leg against the instrument panel board of the truck and then exert his strength to turn the vehicle. The man had suffered from a hydrocele for six years, and in visiting a doctor four hours after the incident his complaints were of pains radiating from the scrotum to the upper part of the abdomen. (Incidentally, he made the same turn three additional times within four hours.) Ten days after the occurrence he was operated on for repair of the hydrocele, and after three months' rest he resumed his employment as a truck driver but had to discontinue the work, owing to his physical condition becoming weakened. At the compensation trial, physicians testifying in his behalf stated that the man was really suffering from an endocarditis and in their opinions the strain aggravated a condition which would have remained quiescent. Their estimate of the disability due to trauma aggravating a preexisting condition was 50 per cent of total, which award was made by the compensation commissioner. Discussion of the case with fellow physicians convinces me that my opinion was correct in that there could not have been an aggravation of endocarditis from the strain and, had the heart been affected from the effort, immediate prostration or intense discomfort would have developed.

M.D., New Jersey.

ANSWER.—In the absence of cardiac symptoms per se, namely precordial pain, dyspnea and severe palpitation, there is no clear basis for the opinion that the physical strain in this case aggravated "heart disease with endocarditis." Generalized abdominal pains and weakness are not cardiac symptoms. If there had been a high degree of valvular involvement of rheumatic or syphilitic origin, it is possible that severe physical strain might have caused the myocardium to fail or even might have produced, as it rarely does, rupture of a valve cusp or of the chordae tendineae; but there is no evidence that such occurrences took place here. It is uncommon for an endocarditis to follow simple physical strain.

CONTRACEPTION SIX YEARS AFTER MENOPAUSE

To the Editor:—I have been asked the question "Is there need for contraceptive measures to be taken by a woman aged 57 who has not menstruated during the past six years? Without such measures what are the chances of her becoming pregnant?" M.D., New York.

ANSWER.—There is no need for such a patient to use contraceptive measures because a pregnancy is out of the question. As far as is known there is no case on record of a gestation having occurred under these circumstances.